Trials, Tribulations, and Successes Rebuilding a Drupal 7 site in Drupal 10



Pacific Northwest Drupal Summit

October 12, 2024

Todd Smith, Digital World Biology



Digital World Biology, LLC

Acknowledgements

Digital World Biology, LLC

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DUE: 1400721, 1501207, 1764225, 2349809, 1901984, 1800909

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Andrew Morton

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Mt. Rainier

herodevs

esteemed

Mt. Adams

MINDSING Creative Works

ATEN Work That Matters

kanopi Studios

tag1

Mt. Baker

Cellar Door

Forum One — Turn Ideas Into Impact.

slalom

In Kind

FFR CNTU — Drupal Training & Consulting

University Marketing & Communications — University of Washington

agaric

DrupalEasy



Agenda



Digital World
Biology, LLC

Introduction
- Who is Todd Smith
- Sites
- Brief History D7-> D10

Planning and Learning
- Resources
- Decisions

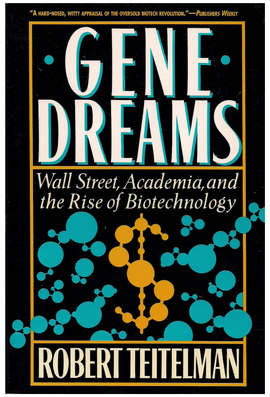
Data Migration
- Easy/Hard

Theming
- Twig
- Tailwind

Experiences/
Findings & Opinions

Who is Todd Smith

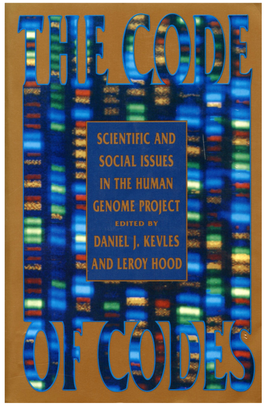
Early Career



Bio-technician
Genetic Systems
MicroProbe



PhD
Medicinal Chemistry
Natural Products



PostDoc
Human Genome
BRCA1 / Bioinformatics

geospiza®

1997



2011



Founder/CEO/CTO …

"Discovered" Drupal ca. 2008

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2014

COMOTION®
Entrepreneur Mentor

PHASE GENOMICS

Wayfinder BIOSCIENCES
Business/Science Advisor

INNOVATEBIO
National Biotechnology Education Center
Community College Biotech Workforce Education

Antibody Engineers
Data Science/AI/Python

Computer Software Journey: "Fractional" Developer

Excel Macros

VAX: GCG
command line

PERL/C/Postscript
databases/web

Commercial Software
databases/HDF5/web

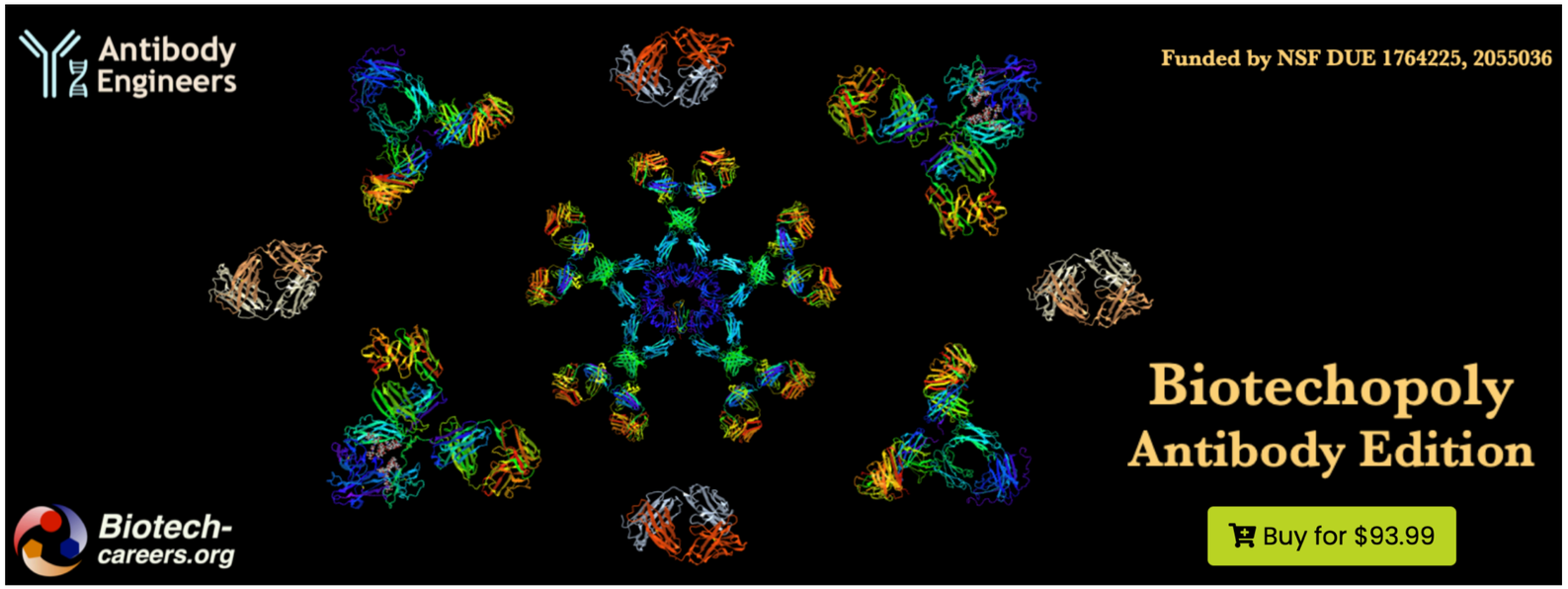
Since 2015
D6 -> D7

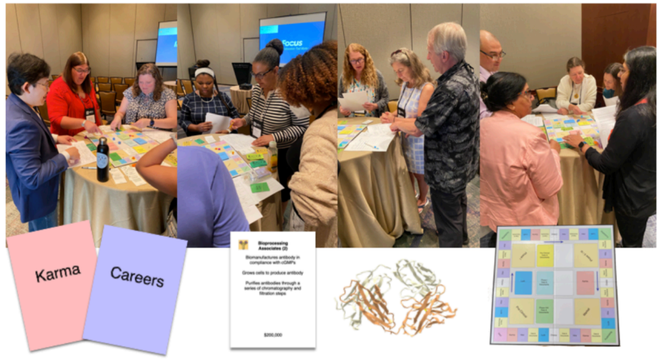
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Biotech Workforce Education

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Biotechopoly: Antibody Edition





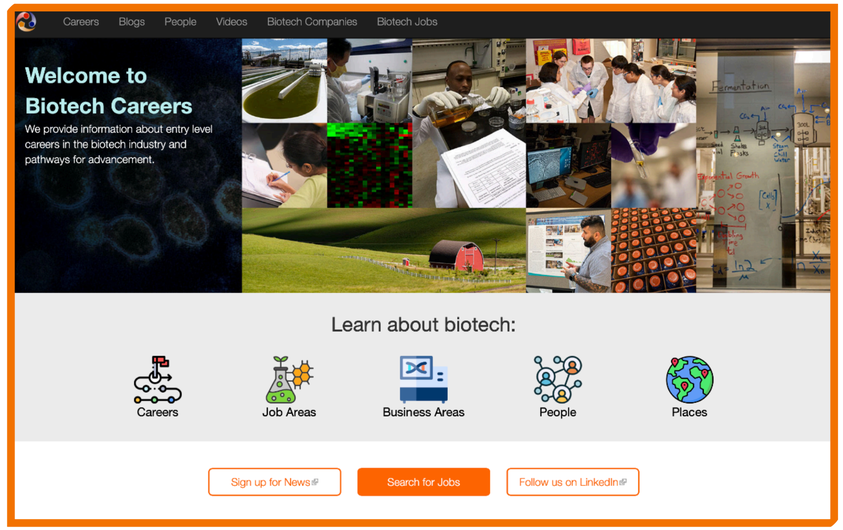
Learn about getting a product to market

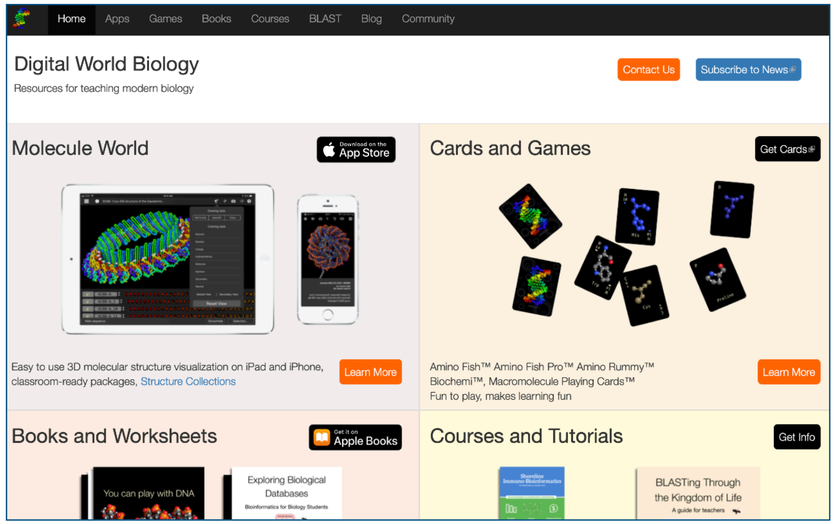
FAQ: Do I need to know a lot of science to play? No

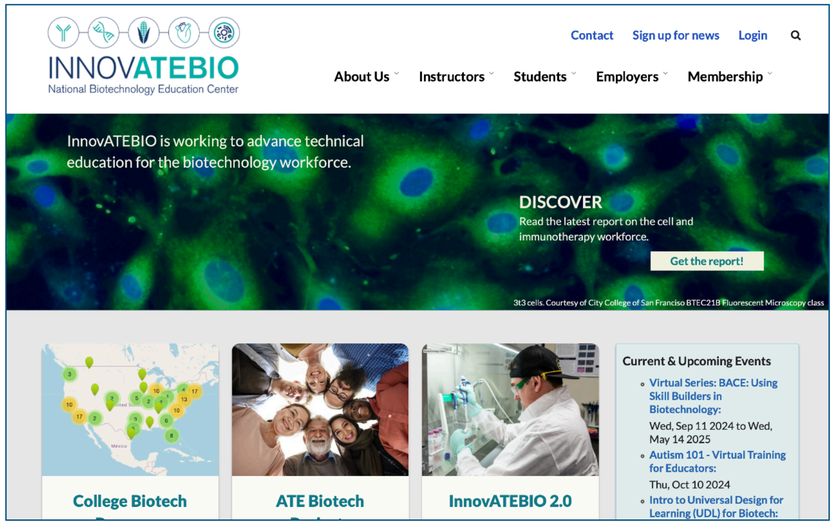
https://www.thegamecrafter.com/games/biotechopoly-antibody-edition

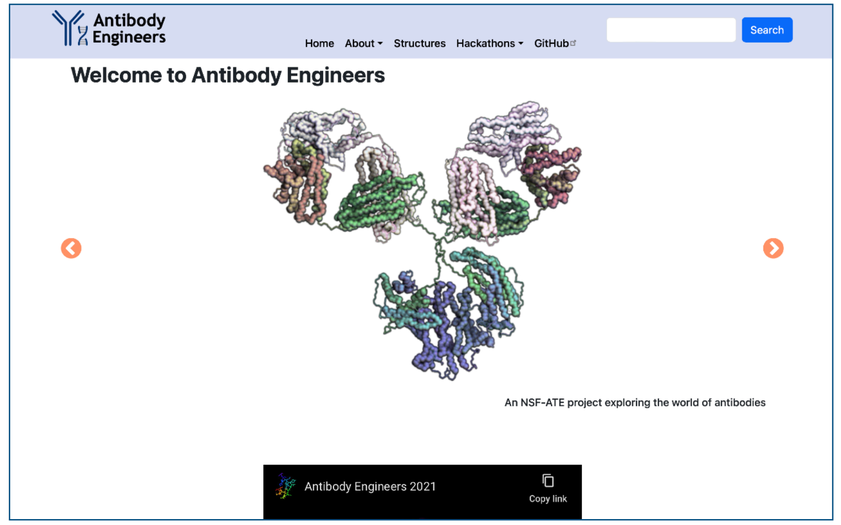
Digital World Biology's Drupal Sites

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My Experience in Three Metaphors

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Blend together in interesting ways



Elephant in the Room
D7, Starshot





Rabbit Holes
modules, styling, data





The Law of Leaky Abstractions*
modules, twig, php



*Joel on Software Nov. 2002 - https://www.joelonsoftware.com/2002/11/11/the-law-of-leaky-abstractions/

What is an Intermediate-Level Drupaler?

Ambitious Site Builder <-> Fractional Developer — Starshot Implications

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Beginner
- Short-term initialization state
- OH WOW, so much to learn



Minimal Drupal Knowledge
- Modules / Web UI
- Content Types / Taxonomies / Fields / Views
- HTML/CSS & some command line

Intermediate
- Have experience(s)
- Problem, solution, move on
- Solutions are not always best practices
- Use “lookup” >> memory
- Develops “muscle” memory
- Short-term expert

Experience →

Time ←

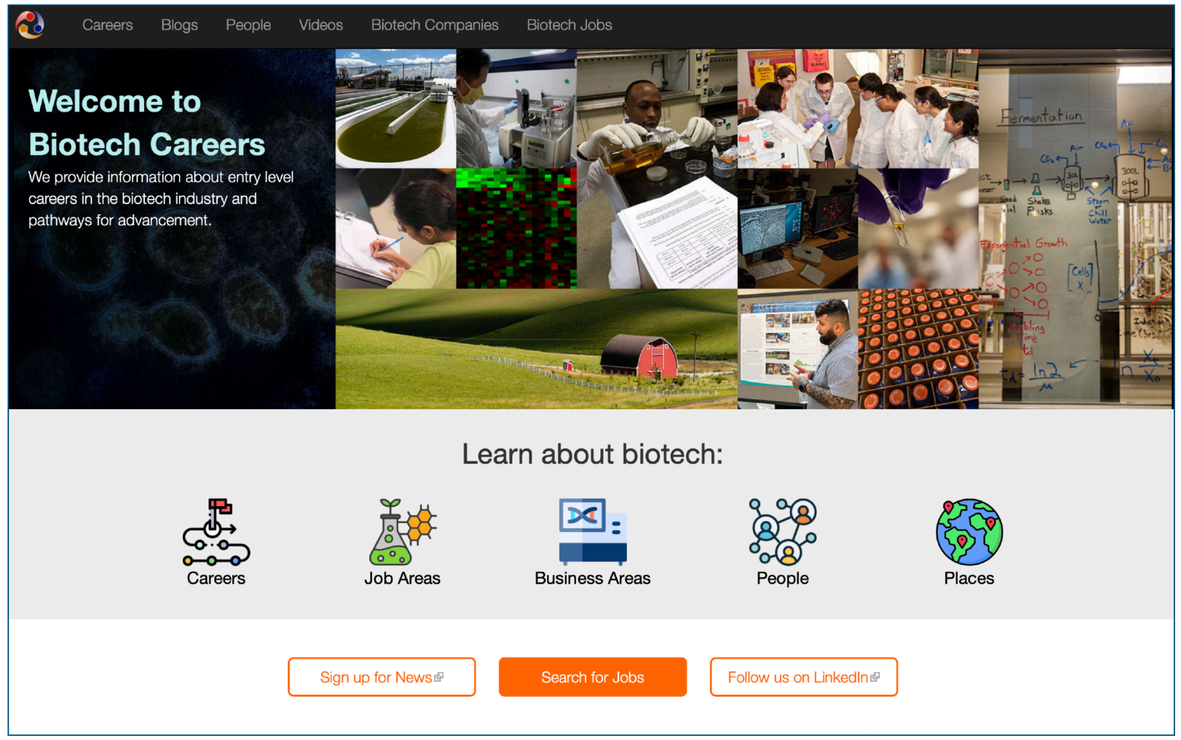
Expert
- Full-time engagement
- Repertoire of design patterns
- Development tool mastery
- Use memory >> lookup
- Balance tool development/ production code (20/80)

Biotech-Careers.org

Biotech-Careers.org - Since 2012

A site to learn about working in biotechnology without advanced degrees

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High Traffic

> 1.3 million page views
~ 600,000 visits
2023/2024

- Content Types:
  - Career pages
  - Job areas
  - Skills
  - Day in the life Interviews
  - Articles
  - Videos
  - Companies
- Paragraphs
  - Skill standards
- Some blocks
- Many Views

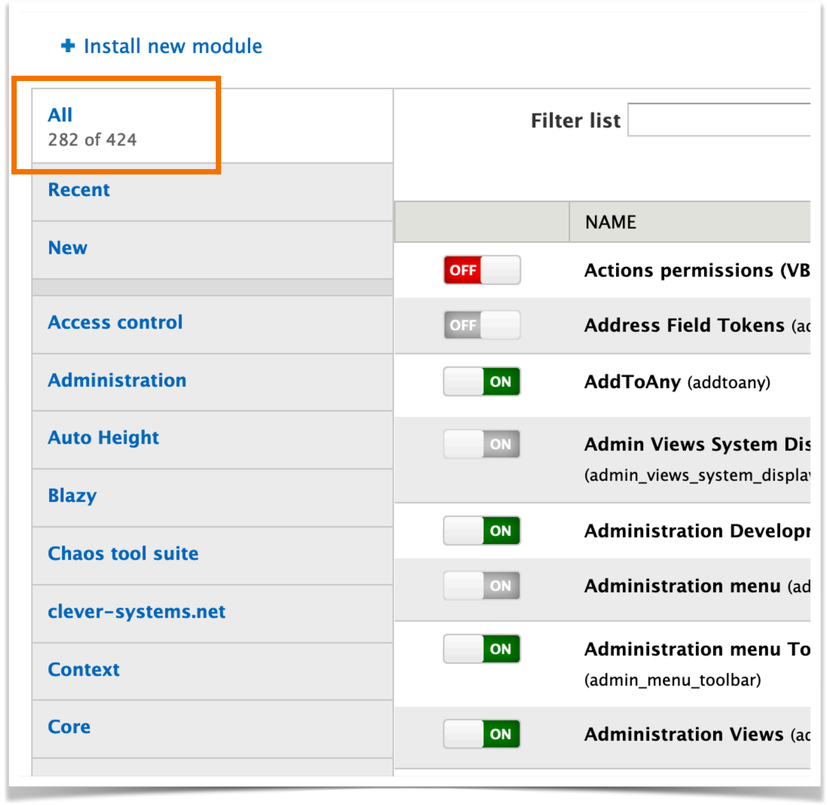
- Taxonomies
  - Education levels
  - Salary ranges
  - Tags
  - Business areas
  - Skill types/categories
- Job Board (integration)
  - Custom module
- Layout / Styling
  - Panels
  - Display Suite
  - CSS Injection

Biotech-Careers Architecture

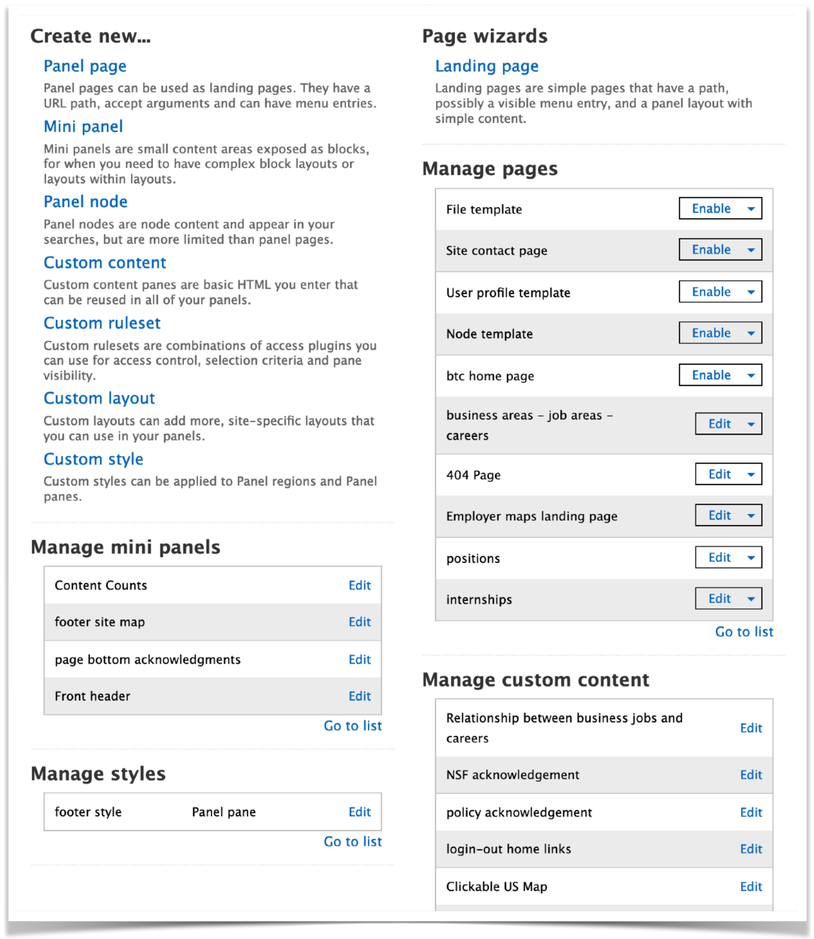
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Content Types, Taxonomies Display Suite, Panels, CSS Injector, Views & Leaflet

Functionality
~300 modules



Layout
panels/display suite



Style
~35 css injector pages



Biotech-Careers: Page Anatomy

Career page integrates data from multiple sources

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Landing Page

Biotechnology Job Descriptions

Filter on Title

Agricultural Technician



Agricultural Technicians work to support the production and use of agricultural materials. They may perform agricultural research and / ... Learn more

Minimum Education

Animal Technician



Animal technicians take care of the laboratory animals that are used in biotechnology research, veterinary research, and product testing ... Learn more

Minimum Education

View

Click

Taxonomy

Agricultural Technician

Career list

- **Agricultural Technician**
- Animal Technician
- Biofuel Technician
- Biomanufacturing Technician - Downstream
- Biomanufacturing Technician - Upstream
- Cell Culture Technician
- Clinical Research Associate
- Compliance Specialist
- Environmental Health & Safety Technician
- Environmental Science and Protection Technician
- Facilities Technician
- Food Sample Inspector
- Food Technologist
- Genomics Technician
- Glass Washer
- Greenhouse or Field Technician
- Instrumentation / Calibration Technician
- Laboratory Assistant
- Laboratory Safety Associate
- Laboratory Technician
- Manufacturing Assistant



Agricultural Technicians work to support the production and use of agricultural materials. They may perform agricultural research and / or work as field technicians, collecting and testing samples. Please note, we recently split the Agricultural and Food Science Technician page into this page and Food Technologist.

Fast Facts & Skills

Pay & Education:

- ~~$19~~ - $24 per hour

Yearly:

- $30,000-$50,000

Minimum education:

- Associates degree
- Certificates
- Bachelors degree

Knowledge

- Data management
- Electronics
- Hazardous materials
- Inventory
- Laboratory Safety

5 Total, View all

Technical

- Analytical chemistry
- Analyze Data
- Animal Care
- Computer skills
- Data entry

16 Total, View all

Professional

- Oral communication
- Team work
- Time management

3 Total, View all

View Agriculture Jobs

View
multiple displays

Biotech-Careers Company DB

Over 9600 companies in more than 13,000 locations

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Panel Landing Page

HTML
image map

Biotechnology is a worldwide business. The Biotech-Careers biotechnology, pharma, and medical device company directory has 9,750 potential employers - engaged in 537 business activities - that are located in 13,587 sites throughout the world. Use the maps below to view biotech employer locations in specific states, the United States or the world.



Mouse over and click on a state to view the employers in that state.

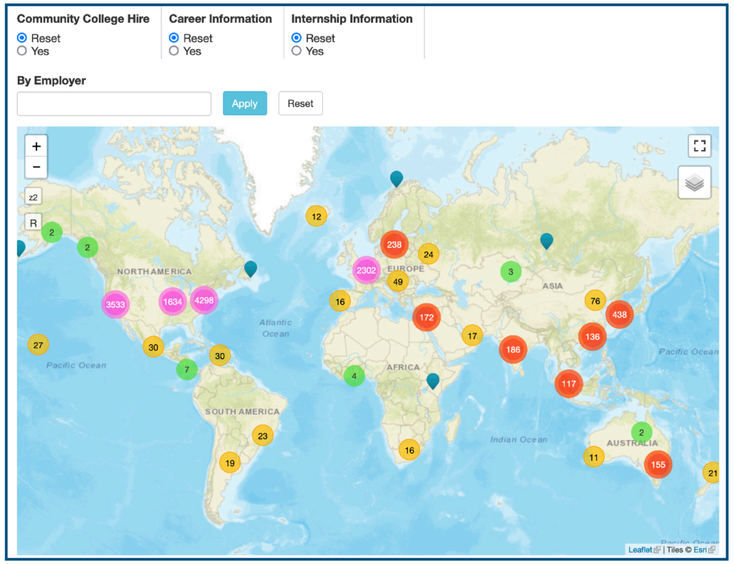


Click the image or view the data as a table organized by state.



Click the image or view the data as a table organized by country.

You can also view the employers organized as a table listing each employer and and its number of locations.



Taxonomy Page (>500)

View
styled with views php

View

View

View

Companies working with Antibodies also work in 186 other areas:

Immunology (98) | Therapeutics (84) | COVID-19 (75) | Cancer Therapeutics (74) | Immunotherapy (54) | Biologics (43) | Reagents (36) | Cell and Gene Therapy (32) | Small Molecules (31) | Autoimmunity (25) | Vaccines (25) | Antibody-Drug Conjugates (24) | Proteins (20) | Diagnostics (18) | Contract Research (17) | Synthetic Biology (17) | T-Cells (15) | Cancer (14) | Immuno-oncology (13) | Biomarkers (11) | Artificial Intelligence (10) | Chemistry (10) | Contract Manufacturing (10) | Oncology (10) | Drug Discovery (9) | ELISA (9) | Immunoassays (9) | Inflammation (9) | Infectious Disease (8) | Services (8) | Assays (7) | CAR-T (7) | Cell Culture (7) | Epigenetics (7) | Peptides (7) | Biomanufacturing (6) | Biopharmaceuticals (6) | Biosimilars (6) | Cell Lines (6) | DNA/RNA Synthesis (6) | EUA (6) | Proteomics (6) | Rare Diseases (6) | Therapeutic Proteins (6) | Alzheimer's (5) | Bioinformatics (5) | CRISPR (5) | Molecular Diagnostics (5) | Personalized Medicine (5) | Phage Technology (5) | Protein Engineering (5) |

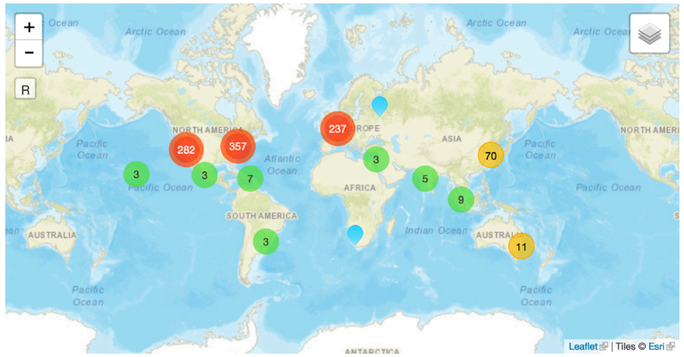
534 Employers in 992 Locations

View By: Geography
- World
- United States

Career Information
- Reset
- Yes

Internship Information
- Reset
- Yes

Filters apply to all views



108Labs

Business Area(s): Food, Cell Culture, Cellular Agriculture, Cell Products, Biologics, Antibodies, Milk

Description:
108Labs is pioneering mammary cell agriculture and secretory antibodies for ...

Aarvik Therapeutics

Business Area(s): Antibodies, Cancer Therapeutics

Description:
Aarvik Therapeutics is pursuing molecules with an improved therapeutic index ...

AAT Bioquest

Business Area(s): Reagents, Molecular Biology, Immunology, Antibodies

Description:
AAT Bioquest specializes in photometric detections including absorption (color), fluorescence ...

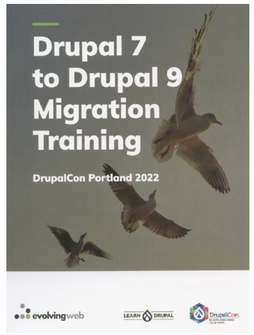
Moving from D7 to D10

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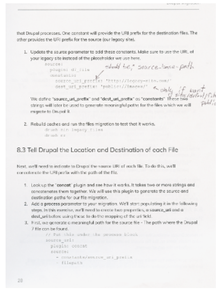
Worry Period

Checking/waiting on modules D7, D9 -> D10
upgrade_manager, upgrade_status modules

DrupalCon Portland



Upgrade Antibody-Engineers
D9 -> D10
Need to be all in on Composer



First Migration:
Articles/Tags

SeaDug
Biotech-Careers
Migration Progress
What about your theme?
Try tailwind
Twig makes it easy

location_migration
Success!

We should do a use case

Twig/Tailwind Theming
Learning / Site setup / Dev / ***57 twig files***

Data Migration
26 yml files

DrupalCon Portland
BoF image_alt
DB, sql

Core content complete! 😀

Punch List

Launch!

2022 Apr 2023 2024 Mar Jun Sep Today Dec

Company DB
Poor views performance 😕

Issue with images (D7?) ~~***Video sizing*** 😖*~~

Need a new token (D7 views)

*Maps taxonomy / **geofields*** 😖

*Fixed (10/10, dwb_tailwind.info - media.oembed, media.frame were set to false

Step 1: Site Setup

Composer or Not: No in between: Composer

- Hosting Provider - Siteground (since 2009: Drupal -> WordPress)



  - Web/SSH
  - Site/dev.site (dev subdomain)
- Server / Local instances
- Local Dev - MAMP
- Composer - setup, updates



If you're going to run a site, you have to learn DevOps

```
Composer/Install notes

# Want to install in public_html

> composer create-project drupal/recommended-project my_site_name_dir --no-interaction --no-install
# creates my_site_name_dir adds composer.json and composer.lock in the directory

# make the web dir - composer default is 'web'
> mkdir public_html

# Create the database: MAMP, add the db user/pass btc/btc
# Siteground follow their steps
# edit composer.json - replace all "web" (not "web-root") with "public_html" there are ~10
# if my_site_name_dir = public_html need to move composer files to top level dir

# Install drupal and the modules listed in composer.json
> composer update (or install)

# if we are copying a site, the modules, installed via composer.json will need to be enabled
# to get a list of enabled modules from the copied site, cd to that site, then:
> drush pm-list --type=Module --status=enabled --format list | xargs > ../newsite/modules.txt

# cd to new site, drush -y bypasses the [yes] prompt
> drush en `cat modules.txt` -y

# more notes on installing/configuring drush when default versions are not what you want
# involves composer require drush/drush .profile files, and drush.par

###### other config ####
# Cannot install beta or alpha versions of modules:
# change the line in composer.json "minimum-stability": "stable", to "dev"
```

Migrating & Building

The structure and design patterns that I create need to be understandable after I forget what I've done

Naming conventions, code placement, content/layout/styling

Refactor early/often

Data Migration

Step 2: Data Migration

Make a migration map. Basic but essential. Good time to clean up

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Content

Source				Destination					Notes
Content Type	**Machine Name**	**Count**	**Path Auto**	**Content Type**	**Machine Name**	**Migrate?**	**Migration**	**Status**	
Article	article	61		Article		Yes	script	Done	blogs
BTC Alumni Profile	photo_journal	45		Alumni Profile		Yes	script	Done	
BTC Company Profile	btc_company_profile	9643				Yes	script	Done	published - want a way to ca
BTC Critical Work Function	btc_critical_work_functio	18				Yes	script	Done	paragraphs
BTC Game Card	btc_game_card	23				Yes	script	Done	
BTC Job	job	34				Yes	script	Done	Change to careers, Sandy c
BTC Skill	btc_skill	98				Yes	script	Done	
BTC Skill Standard Source	btc_skill_standard_sourc	10				Yes	script	Done	
BTC Video	video	81				Yes	script	Done	Required migration videos t
Basic page	page	14				Yes	script	Done	
Bio-Link-Instruction-Topics	bio_link_instruction_topic	37				Yes	Script	Done	rename to Instruction Topic
BTC Company Activity Group	btc_company_activity_gr	6				No	Maual, Refactor		Convert to business catego
BTC Position	btc_position	36				No	Manual		Job posts, start over
BTC front image and message	btc_front_image_messag	7				No			redo later if we miss it
Event	event	51				No	Manual		Past not important
	notes	23				No			reminent from 2012 - data s
BTC Instruction Profile	btc_educator_profile	327				Maybe	script		Data from NCES - colleges a
BTC Project	btc_project	16				Maybe	script		I use it
BTC Sponsor Partner	btc_sponsor	13				Maybe	script		Needs a relook, merge com
Licensed image	licensed_image	8				Maybe			Need to see how these are
									A bunch are flaticon icons.
Media									
Images and files								Done	issues with alt tags
Videos								Done	used media remote_video

Content Type | Article - d | Job > Career - d | Skill - d | Alum Prof > People in Bio - d | Company Profile - d | Critial Work Function - d | Game Card - d | Skill Std Source -d | Video - d | Pa

Clean up

18 Tabs!

Step 2: Data Migration

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Fix things we no longer love or want to update later if we miss them

Taxonomy

Source			Destination						
Vocabulary	**Machine Name**	**Count**	**Vocabulary**	**Machine Name**	**Migrate?**	**Migration**	**Status**	**Notes**	
Company Core Activity	company_core_activity	539	Business Area	bussiness_area	Yes	script	done		
Education	education	6	Education	education	Yes	manual	done		
Job Areas	job_areas	36	Job Areas	job_areas	Yes		done	Convert to content type	
Position Type	position_type	2			No			Make a list in content?	
Salary	salary	5	Salary	salary	yes	manual	done	Salary ranges	
Skill Category	skill_category	39	Skill Category	skill_category	Yes	script	done		
Skill Type	skill_type	3	Skill Type	skill_type	Yes	manual	done		
Sponsor Levels	sponsor_levels	6			Maybe	manual		drop? Add back if needed.	
Tags	tags	100	Tags	tags	Yes	script	done		
Target Group	internship_level	5			No			deprecate	

Name change

Taxonomy to content

Company Profile

Clean up

New names

New way

Source Field			Destination		Notes
Name	Type	Machine name	Import	Machine name	
Company Lookup	Entity Ref	field_company_lookup	no	field_company_lookup	
Employer Name	Node module element	title	yes	title	
Hiried a Bio-Link Stude	List (text)	field_hired_a_bio_link_student	yes	field_hired_a_cc_grad	**name change, some fanc**
Business Area(s)	Entity Ref	field_core_activity	yes	field_business_areas	**name change**
Website	Link	field_website	yes	field_website	2 parts
Description	Long text & summary	body	yes	body	
Locations	Location	field_location	yes	field_company_locatio	module switch, tested
Closed or Unpublished	List (text)	field_closed	no	field_closed	import only publised to st
To Do - notes	Long text	field_to_do_notes	no	field_to_do_notes	see above
Hidden					
Career Page(s)	Long text	field_career_page	yes	field_career_page	html text
Internship Pages	Long text	field_internship_page	yes	field_intership_page	html text
Hired student logo	Image	field_hired_student_logo	no		Holds the DNA logo, but li

Step 2: Data Migration

Learning curve identified replicable patterns

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A lot of stuff is not in the tutorials/docs

Names organize the files, identify the entity types

- deprecated
- images_and_files.yml
- media_alt.yml
- media_file.yml
- media_image.yml
- media_vector_image.yml
- media_video.yml
- node_article.yml
- node_biotech_person.yml
- node_career.yml
- node_company_profile.yml
- node_game_card.yml
- node_instruction_topic.yml
- node_job_area.yml
- node_page.yml
- node_skill_critical_work.yml
- node_skill_std_source.yml
- node_skill.yml
- node_video.yml
- paragraph_key_activity.yml
- taxonomy_core_activity.yml
- taxonomy_education.yml
- taxonomy_salary.yml
- taxonomy_skill_categories.yml
- taxonomy_skill_types.yml
- taxonomy_term_tags.yml
- users.yml



Next slide

```
field_media_oembed_video:
  # replace any https://www.youtube.com/embed/ with https://youtu.be/
  # for some reason https://www.youtube.com/embed/code were invalid
  # which needed a new migrate module - https://www.drupal.org/project/migrate_process_regex
  # later found that str_replace works too, so might delete the regex module.
  # the oembed module did not help with the above problem
  plugin: str_replace
  search: ["www.youtube.com/embed"]
  replace: ["youtu.be"]
  source: field_video_url/0/video_url
```

```
39:  # this was expanded due to issues with things not mapping correctly (see end for original try)
40:  # (getting todd, instead of Todd Smith, too many anonymous due to UID=0 or UID=1 issues)
41:  # example at: www.drupal.org/docs/8/api/migrate-api/migrate-process-plugins/
42:  # migrate-conditions/migrate-conditions-process-plugins/if-condition
```

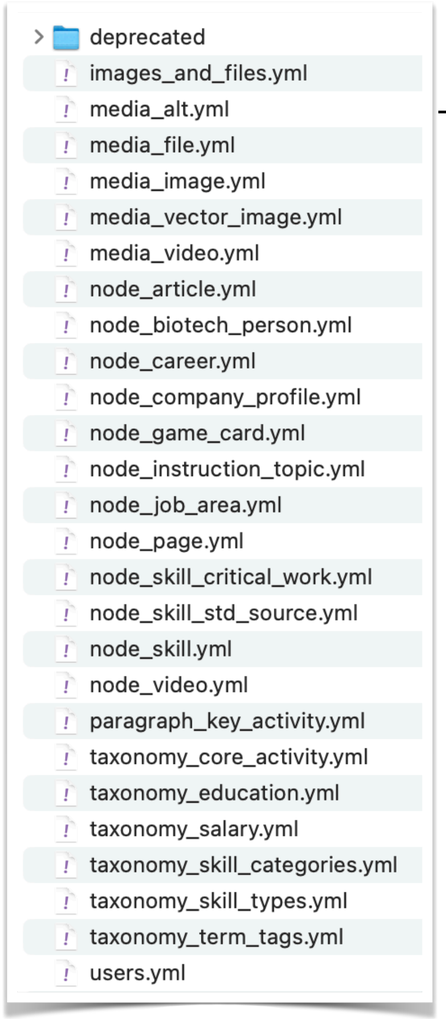
```
uid:
  plugin: if_condition
  source: node_uid
  condition:
    plugin: in_array
    value:
      - 0
      - 1
  else_process:
    plugin: migration_lookup
    migration: users
```

Step 2: Data Migration

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Media_alt adventure

Problem: alt/titles used (variable ways), multiple image fields

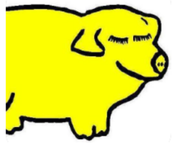



```yaml
# media_alt updates the alt text, and caption field, in images using data from
# from field_file_image_alt_text_value, field_file_image_title_text_value in the d7 database
# for completeness, field_article_image_alt, field_photojournal_image_alt, field_photojournal_image_title
# along with the appropriate ids (entity_id, field_article_image_fid, field_photojournal_image_fid)
# were also obtained. All data were combined into an excel spreadsheet and sorted on ids (fid) to
# observe duplicates / triplicates to have confidence that the obtained alt/title text was as complete as possible.
# see example_sqls.txt for the commands.
# because this config updates field data, it needs to be run with the --update option
# "drush mim media_alt --update", with "--migrate-debug", one can see the appropriate fields being populated.
id: media_alt
label: Image alt and title text from BTC extracted via SQL and compiled in excel
migration_group: legacy_content
migration_tags:
  - media
  - file
  - Drupal 7
migration_dependencies:
  optional:
    - images_and_files
    - media_image
source:
  plugin: csv
  path: modules/custom/migrate_btc_content/btc-alttext.csv
  ids: [fid]
  header_offset: null
  fields:
    - name: fid
    - name: alt_text
destination:
  plugin: 'entity:media'
  default_bundle: image
process:
  # mid: fid # this gives an error
  field_media_image/target_id:
    plugin: get
    source: fid
  field_media_image/alt:
    plugin: get
    source: alt_text
  field_caption:
    plugin: get
    source: alt_text
```

Next slide

Step 2: Data Migration

BoF's are good



benjifisher

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—migrate-debug

	entity_type The entity type this data is attached to	bundle The field instance bundle to which this row belong…	deleted A boolean indicating whether this data item has be…	entity_id The entity id this data is attached to	revision_id The entity revision id this data is attached to, o…	language The language for this data item.	delta The sequence number for this data item, used for m…	field_file_image_title_text_value
Edit Copy Delete	file	image	0	668	668	und	0	Biotech Careers web site
Edit Copy Delete	file	image	0	669	669	und	0	Bio-Link web site
Edit Copy Delete	file	image	0	670	670	und	0	Learn the lingo
Edit Copy Delete	file	image	0	672	672	und	0	Career Page
Edit Copy Delete	file	image	0	673	673	und	0	Job Area

1. Find the data in phpMyAdmin

2. Use correct version of drush to connect to the D7 DB and run SQL queries

```
drush sql:query "SELECT entity_id, field_file_image_title_text_value
FROM field_data_field_file_image_title_text WHERE
field_file_image_title_text_value is not NULL AND
field_file_image_title_text_value !=\"\" ORDER by entity_id" >
field_file_image_title_text.txt
```

Repeat with alt text

```
668     Biotech Careers web site
669     Bio-Link web site
670     Learn the lingo
672     Career Page
673     Job Area
674     Site overview
676     Biotechnology Company Activities
677     National Center for the Biotechnology Workforce
686     Computer screen
```

Example output

3. Review, cleanup in Excel, save as CSV → 4. Migrate

Step 2: Data Migration

Location to Address: Easier than expected … after a while



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D7 site used location module - it's dead
D8+ above uses address

But there's a module 😀

location_migration 1.0.0-beta5

Install

Works with Drupal: ^8.8 || ^9

```
composer require 'drupal/location_migration:^1.0@beta'
```

Using Composer to manage Drupal site dependencies

It's not on 10 😖

1. Make it custom; update core_version_requirement

```
name: Location Migration
type: module
description: Migration plugins for migrating Drupa
core_version_requirement: ^8.8 || ^10
package: Custom
dependencies:
  - address:address
  - drupal:migrate_drupal
  - geolocation:geolocation
```

2. Dig through code, find a plugin

src/Plugin/migrate/field/Location.php:61

```
public function
defineValueProcessPipeline(MigrationInterface
$migration, $field_name, $data) {
    $migration->mergeProcessOfProperty($field_name, [
      'plugin' => 'location_to_address',
      'source' => $field_name,
    ]);
```

3. Test it

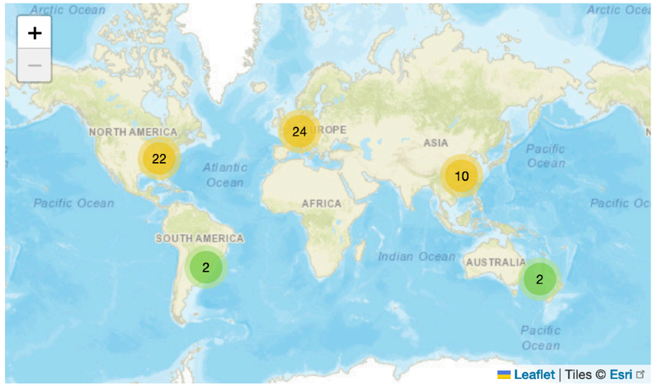
Caveat

```
  field_company_location:
    plugin: location_to_address
    # super cool, this imports properly, geocodes on entry/save,
    # slows things down - 1-2hrs to load 9500
    # Module needs to be enabled before running,
    # then disabled to prevent conflict with other migrations.
    source: field_location
```

Location added a field to all content, and added a unique table to the DB

Success 💯🎯💥🔥

Pfizer - 60 locations



Step 2: Data Migration

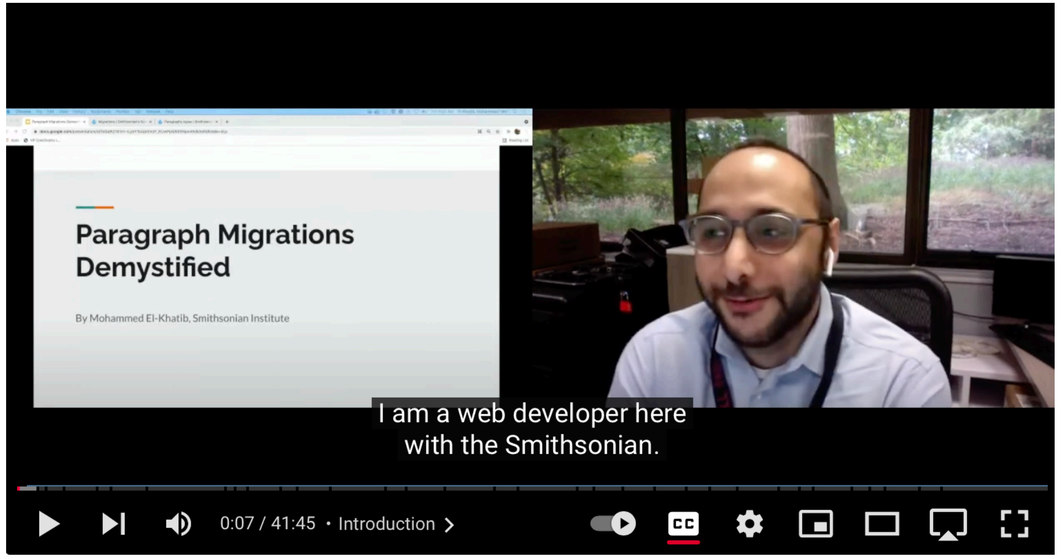
Paragraphs and notes

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Migrating paragraphs (one content-type)

Demystifying Paragraphs Migrations from D7 to D8/D9

https://www.youtube.com/watch?v=gvBGDFQ2M64



Notes

Migrating images - an odyssey
> drush mim images_and_files would quit due to **20 failures**,
drupal slack: Core Drush command, `--force` flag. Migrate Tools, `--continue-on-failure` flag. To #understand the problem: `drush migrate:messages` might provide some info

> drush cr && drush mim --group=legacy_content --update --continue-on-failure
continues and just reports that 20 failed

> drush migrate:status images_and_files
lists errors causing failures: 4, 404s and 16, 403s from missing/private files

hide d6 migration errors in migrate:status
> drush migrate:status --tag="Drupal 7"

Corresponding entity references: Disable for migrations with references that have CERs otherwise get:
`Undefined array key "target_bundles" CorrespondingReference.php:350`

Step 2: Data Migration

One last thing

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Address bug



Concerned company locations were incorrect

Started a new .yml forgot it was incomplete,

> drush cr -
reloads .ymls and …

Removed the offending file, all good

```
todd@TMS-M1-Pro btc-d10 % drush cr && drush mim foo
 [success] Cache rebuild complete.
 [error]  TypeError: Cannot access offset of type string on string in Drupal\migrate\Plugin\NoSourcePluginDecorator->Drupal\migrate\Plugin\{closure}() (line 39 of /Users/
todd/Sites/btc-d10/public_html/core/modules/migrate/src/Plugin/NoSourcePluginDecorator.php) #0 [internal function]: Drupal\migrate\Plugin\NoSourcePluginDecorator-
>Drupal\migrate\Plugin\{closure}(Array)
#1 /Users/todd/Sites/btc-d10/public_html/core/modules/migrate/src/Plugin/NoSourcePluginDecorator.php(38): array_filter(Array, Object(Closure))
#2 /Users/todd/Sites/btc-d10/public_html/core/modules/migrate/src/Plugin/Discovery/ProviderFilterDecorator.php(81): Drupal\migrate\Plugin\NoSourcePluginDecorator-
>getDefinitions()
#3 /Users/todd/Sites/btc-d10/public_html/core/lib/Drupal/Component/Plugin/Discovery/DerivativeDiscoveryDecorator.php(86):
Drupal\migrate\Plugin\Discovery\ProviderFilterDecorator->getDefinitions()
#4 /Users/todd/Sites/btc-d10/public_html/core/modules/migrate/src/Plugin/MigrationPluginManager.php(255): Drupal\Component\Plugin\Discovery\DerivativeDiscoveryDecorator-
>getDefinitions()
#5 /Users/todd/Sites/btc-d10/public_html/core/lib/Drupal/Core/Plugin/DefaultPluginManager.php(213): Drupal\migrate\Plugin\MigrationPluginManager->findDefinitions()
#6 /Users/todd/Sites/btc-d10/public_html/modules/contrib/migrate_tools/src/Drush/Commands/MigrateToolsCommands.php(923): Drupal\Core\Plugin\DefaultPluginManager-
>getDefinitions()
#7 /Users/todd/Sites/btc-d10/public_html/modules/contrib/migrate_tools/src/Drush/Commands/MigrateToolsCommands.php(471):
Drupal\migrate_tools\Drush\Commands\MigrateToolsCommands->migrationsList(Array, Array)
#8 [internal function]: Drupal\migrate_tools\Drush\Commands\MigrateToolsCommands->import('foo', Array)
#9 /Users/todd/Sites/btc-d10/vendor/consolidation/annotated-command/src/CommandProcessor.php(276): call_user_func_array(Array, Array)
#10 /Users/todd/Sites/btc-d10/vendor/consolidation/annotated-command/src/CommandProcessor.php(212): Consolidation\AnnotatedCommand\CommandProcessor-
>runCommandCallback(Array, Object(Consolidation\AnnotatedCommand\CommandData))
#11 /Users/todd/Sites/btc-d10/vendor/consolidation/annotated-command/src/CommandProcessor.php(175): Consolidation\AnnotatedCommand\CommandProcessor-
>validateRunAndAlter(Array, Array, Object(Consolidation\AnnotatedCommand\CommandData))
#12 /Users/todd/Sites/btc-d10/vendor/consolidation/annotated-command/src/AnnotatedCommand.php(387): Consolidation\AnnotatedCommand\CommandProcessor-
>process(Object(Symfony\Component\Console\Output\ConsoleOutput), Array, Array, Object(Consolidation\AnnotatedCommand\CommandData))
#13 /Users/todd/Sites/btc-d10/vendor/symfony/console/Command/Command.php(326): Consolidation\AnnotatedCommand\AnnotatedCommand-
>execute(Object(Symfony\Component\Console\Input\ArgvInput), Object(Symfony\Component\Console\Output\ConsoleOutput))
#14 /Users/todd/Sites/btc-d10/vendor/symfony/console/Application.php(1096): Symfony\Component\Console\Command\Command->run(Object(Symfony\Component\Console\Input\ArgvInput),
Object(Symfony\Component\Console\Output\ConsoleOutput))
#15 /Users/todd/Sites/btc-d10/vendor/symfony/console/Application.php(324): Symfony\Component\Console\Application-
>doRunCommand(Object(Consolidation\AnnotatedCommand\AnnotatedCommand), Object(Symfony\Component\Console\Input\ArgvInput),
Object(Symfony\Component\Console\Output\ConsoleOutput))
#16 /Users/todd/Sites/btc-d10/vendor/symfony/console/Application.php(175): Symfony\Component\Console\Application->doRun(Object(Symfony\Component\Console\Input\ArgvInput),
Object(Symfony\Component\Console\Output\ConsoleOutput))
#17 /Users/todd/Sites/btc-d10/vendor/drush/drush/src/Runtime/Runtime.php(110): Symfony\Component\Console\Application->run(Object(Symfony\Component\Console\Input\ArgvInput),
Object(Symfony\Component\Console\Output\ConsoleOutput))
#18 /Users/todd/Sites/btc-d10/vendor/drush/drush/src/Runtime/Runtime.php(40): Drush\Runtime\Runtime->doRun(Array, Object(Symfony\Component\Console\Output\ConsoleOutput))
#19 /Users/todd/Sites/btc-d10/vendor/drush/drush/drush.php(139): Drush\Runtime\Runtime->run(Array)
#20 /Users/todd/Sites/btc-d10/vendor/drush/drush/drush(4): require('/Users/todd/Sit...')
#21 {main}.
TypeError: Cannot access offset of type string on string in Drupal\migrate\Plugin\NoSourcePluginDecorator->Drupal\migrate\Plugin\{closure}() (line 39 of /Users/todd/Sites/
btc-d10/public_html/core/modules/migrate/src/Plugin/NoSourcePluginDecorator.php).
 [warning] Drush command terminated abnormally.
```



Drush errors are not always helpful, *don't freak*



Theming

Step 3: Theming & Layout

Old way vs new way

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	BTC D7	BTC D10
Theme	Bootstrap 3 / Tweme	Custom, twig
Styles	Overrides with HTML classes, CSS injector*	Tailwind >> CSS classes
Landing Pages	Panels	Layout Builder
Content Taxonomy	Display Suite	Display Suite
View Pages	HTML classes, CSS injector	Twig, Tailwind

*35 css injector files, >1000s lines of code, css to undo css, !important …

Why Tailwind

Move from complex css classes to utility classes

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I Type:

```
{# break the conent into its fields for individual styling #}
{# set attributes and fields for different cards #}
{% if attributes.hasClass('node--type-career') %}
  {% set title_header = 'bg-blue-950 text-white' %}

{% elseif attributes.hasClass('node--type-people-in-biotech') %}
  {% set title_header = 'bg-amber-900 text-white' %}

{% elseif attributes.hasClass('node--type-job-area') %}
  {% set title_header = 'bg-green-950 text-white' %}

. . .
```

I Get:

```
.bg-blue-950 {
  --tw-bg-opacity: 1;
  background-color:
   rgb(23 37 84 /
   var(--tw-bg-opacity));
}

.text-white {
  --tw-text-opacity: 1;
  color: rgb(255 255 255 /
   var(tw-text-opacity));
}
```

When configured with auto reload, typing, saving, & viewing happen concurrently

Theming: Twig & Tailwind

Getting started

Digital World Biology, LLC

https://tomswebstuff.com/blog/super-fast-drupal-theme-development-tailwindcss

Notes:

1. Install tailwind in the theme directory
   - had an issue where I did this in my home dir before, it was getting picked up. Deleted the node_modules, package.json, package.lock.json other files, then could install properly
2. Compiling css warning
   - warings: no utility classes were detected in your source files. Could be content is not configured yet (?)
3. Make sure aggregate css/js (config/performance) is unchecked
   - issue with dist/css/styles.css not loading, searching around led to check performance, don't aggregate -- css/js unchecked, all good.
4. Rebuild style.css, or turn on watch (npm run watch)
   - had css that was not taking.
5. Errors/missing in blog:
   Double check names, sometimes style when styles is correct
   tailwind.config.js configuration was missing/assumed needed:

```
content: [
    './templates/**/*.html.twig',
    './js/**/*.js',
 ],
```

Installing/ configuring Tailwind

Theming: Twig & Tailwind

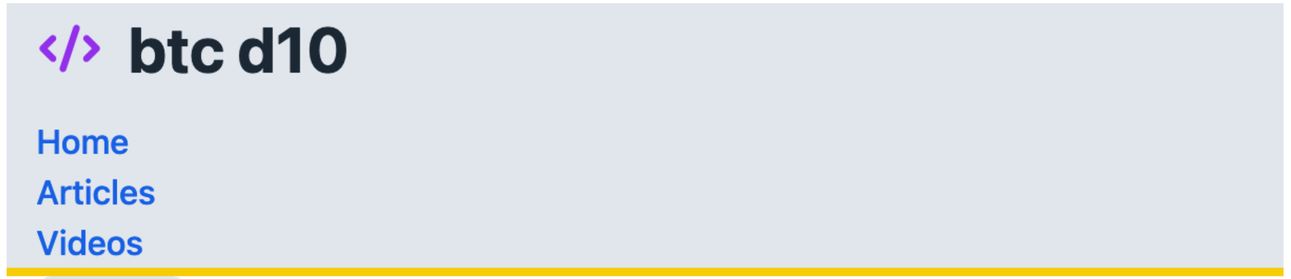
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Getting started: settings.php

https://tomswebstuff.com/blog/super-fast-drupal-theme-development-tailwindcss

Create a nav region

```
{# basic structure from https://tomswebstuff.com/blog/super-fast-drupal-theme-development-tailwindcss #}
<div class="layout-container">
  <header role="banner" class="w-full bg-slate-200 border-b-4 border-yellow-400" x-data="{ open: false }">
    <div class="navbar navbar-expand-lg pb-2 lg:flex lg:flex-wrap items-center justify-between mx-auto container relative">
      {{ page.header }}
      {{ page.actions }}
    </div>
    <nav class="flex mx-auto container">
      {{ page.navbar }}
    </nav>
  </header>
```



Which, I since then broke

Theming: Twig & Tailwind



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Getting started: settings.php

https://tomswebstuff.com/blog/super-fast-drupal-theme-development-tailwindcss

settings.php

```
/**
 * Load local development override configuration, if available.
 *
 * Create a settings.local.php file to override variables on secondary (staging,
 * development, etc.) installations of this site.
 * Keep this code block at the end of this file to take full effect.
 */

if (file_exists($app_root . '/' . $site_path . '/settings.local.php')) {
  include $app_root . '/' . $site_path . '/settings.local.php';
}
```

settings.local.php - *<?php & D7 DB connection not shown*

```
# for debugging twig per tom's blog
$settings['container_yamls'][] = $app_root . '/' . $site_path . '/development.services.yml';

# from tom's blog, debugging twig
$settings['cache']['bins']['render'] = 'cache.backend.null';
$settings['cache']['bins']['dynamic_page_cache'] = 'cache.backend.null';
$settings['cache']['bins']['page'] = 'cache.backend.null';
$settings['cache']['bins']['page_cache'] = 'cache.backend.null';

$config['system.performance']['css']['preprocess'] = FALSE;
$config['system.performance']['js']['preprocess'] = FALSE;


// $settings['system.performance']['twig.debug'] = TRUE;
// https://www.drupal.org/forum/support/theme-development/2022-09-06/themings-css-without-boring-clearing-cache-on-each-change
# for tailwind loading
$settings['tailwind_jit_executable'] = '/usr/local/bin/tailwindcss';
```

Theming: Twig & Tailwind

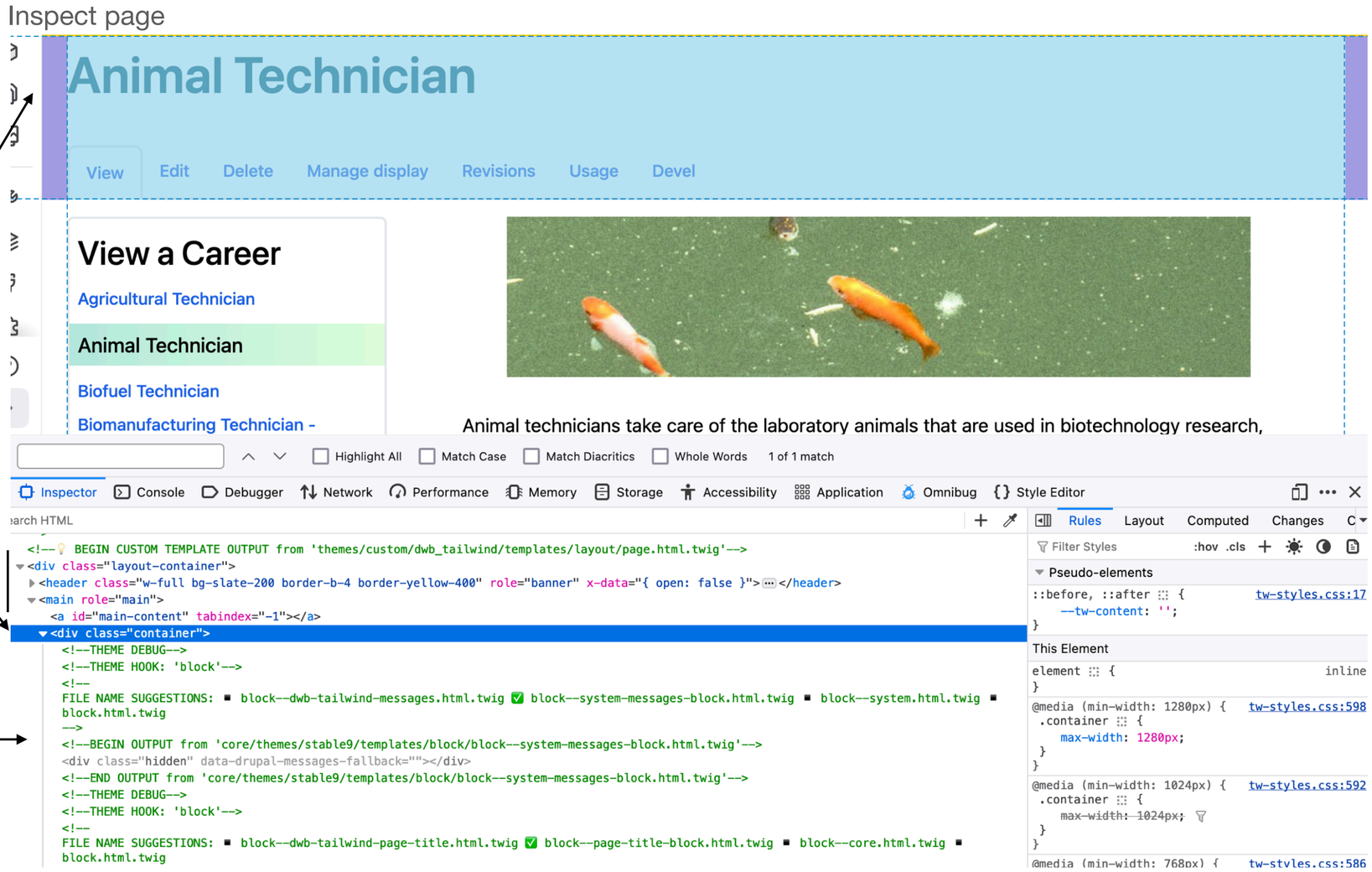
Getting started: settings.php

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Mouse over

See which twig is used

Twig files

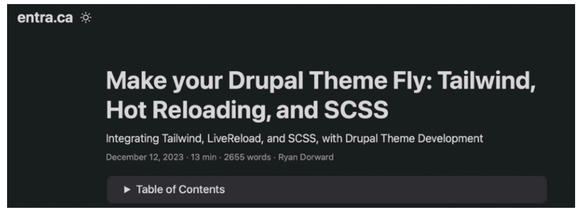


Theming: Twig & Tailwind

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Getting started: live reload

https://entra.ca/blog/drupal-tailwind-livereload-scss/



1. Install packages

```
4201  npm install -D tailwindcss@latest postcss@latest autoprefixer@latest\n
4231  npm install tailwindcss postcss autoprefixer --save-dev\n
4232  npm install livereload --save-dev
4233  npm install concurrently --save-dev
```

2. Configure gulpfile.js

```
const gulp = require('gulp');
const sass = require('gulp-sass')(require('sass'));
const postcss = require('gulp-postcss');
const autoprefixer = require('autoprefixer');
const sourcemaps = require('gulp-sourcemaps');
const rename = require('gulp-rename');

function styles() {
    return gulp.src('src/**/*.scss')
        .pipe(sourcemaps.init())
        .pipe(sass().on('error', sass.logError))
        .pipe(postcss([autoprefixer()]))
        .pipe(sourcemaps.write('.'))
        .pipe(rename((path) => {
          // Replace 'src' with 'css' in the directory path
          path.dirname = path.dirname.replace(/^src/, 'css');
        }))
        .pipe(gulp.dest('dist'));
}

function watch() {
    return gulp.watch('src/**/*.scss', styles);
}

exports.styles = styles;
exports.watch = watch;
```

3. Add livereload.js to html.html.twig

```
<!DOCTYPE html>
<html{{ html_attributes }}>
  <head>
    <head-placeholder token="{{ placeholder_token }}">
    <title>{{ head_title|safe_join(' | ') }}</title>
    <css-placeholder token="{{ placeholder_token }}">
    <js-placeholder token="{{ placeholder_token }}">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    {# localhost: 35729 is for automating reloads, remove in production #}
    <script src="http://localhost:35729/livereload.js"></script>
  </head>
  <body{{ attributes }}>
    . . .

  </body>
</html>
```

4. Manage CSS with SCSS - live reload requires a compile step



Tailwind: There's More

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Mix classic css classes and utility classes, preconfigure favorite classes

tw-styles.css - set globals

```
@tailwind base;
@tailwind components;
@tailwind utilities;

/* firefox, chrome allow selector nesting, .class { tag { code } }, safari does not */
@layer base {
  /* center page content */
  .container {@apply m-auto px-6 }
  a { @apply text-dwb-link font-medium }
  a { @apply hover:underline hover:text-blue-900}

  /* typography (was .dwb-classes selector) */
  h2 { @apply text-[2rem] font-medium mb-2 }
  h2 a { @apply text-dwb-link hover:text-blue-900 }
  h3 { @apply text-[1.75rem] font-medium mb-1 }
 . . .

  /* fixes */
  /* broken external link icon wrapping */
  svg.ext { @apply absolute inline-block  }
  a.ext { @apply mr-3 }
}
```



tw-styles.css - set favorite classes (cards are the link, css grid auto templates)

```
/* cards and layout */
  .dwb-link-card {
    @apply relative block rounded-md border-2 bg-white
    hover:text-dwb-link hover:shadow-lg hover:bg-slate-50;
  }
  .dwb-flex { @apply flex overflow-scroll p-4 border-2 rounded-md gap-4 }
  /* should think about how to make this cody - subst on grid-cols var */
  .dwb-grid-300 { @apply grid grid-cols-300 gap-6 mb-6 justify-items-center md:justify-items-start }
  .dwb-grid-260 { @apply grid grid-cols-260 gap-4 mb-6 justify-items-center md:justify-items-start }
  .dwb-grid-200 { @apply grid grid-cols-200 gap-4 mb-6 justify-items-center md:justify-items-start }
```

tailwind-config.js - set globals

```
module.exports = {
  // important: true,
  corePlugins: {
    // preflight: false,
  },
  content: [
    './templates/**/*.html.twig',
    './js/**/*.js',
  ],
  mode: 'jit',
  // names {} (e.g. listStyleType) below cannot have '-'
  // use camelCase for camel-case
  safelist: [
   'body',
   'img',
   'figure',
   'svg',
   'ext',
   'rteindent1',
  ],
  theme: {
    listStyleType: {
      none: 'none',
      disc: 'disc',
      circle: 'circle',
      decimal: 'decimal',
    },
    extend: {
      gridTemplateColumns: {
        '300': 'repeat(auto-fit,  minmax(300px, 1fr))',
        '260': 'repeat(auto-fill, minmax(260px, 1fr))',
        '200': 'repeat(auto-fit,  minmax(200px, 1fr))',
      },
      colors: {
        'dwb-link' : '#1e61e7'
      }
```

Regret having this set

Precompiled - always available (favs from modules)

The disc et al of list-disc, list-circle …

Ditto, but grid-cols-

Theming: Twig & Tailwind

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Getting started: Ready to theme!

5. Configure package.json

```
{
  "devDependencies": {
    "autoprefixer": "^10.4.19",
    "concurrently": "^8.2.2",
    "gulp": "^5.0.0",
    "gulp-postcss": "^10.0.0",
    "gulp-rename": "^2.0.0",
    "gulp-sass": "^5.1.0",
    "gulp-sourcemaps": "^2.6.5",
    "livereload": "^0.9.3",
    "postcss": "^8.4.38",
    "sass": "^1.74.1",
    "tailwindcss": "^3.4.3"
  },
  "scripts": {
    "build:tw": "npx tailwindcss build -i ./src/css/tw-styles.css -o ./dist/css/tw-styles.css",
    "watch:tw": "npx tailwindcss -i ./src/css/tw-styles.css -o ./dist/css/tw-styles.css --watch",
    "build:css": "postcss ./src/css/tw-styles.css -o ./dist/css/tw-styles.css",
    "watch:css": "postcss ./src/css/tw-styles.css -o ./dist/css/tw-styles.css --watch",
    "livereload": "livereload --exclusions ./node_modules/ --exts 'css,js,twig,theme,apng,avif,gif,jpg,jpeg,jfif,pjpeg,pjp,png,svg,webp'",
    "gulp-watch:css": "gulp watch",
    "watch": "concurrently \"npm run watch:css\" \"npm run livereload\" \"npm run gulp-watch:css\"",
    "build": "gulp styles & postcss ./src/css/styles.css -o ./dist/css/styles.css"
  }
}
```

```
PROBLEMS  OUTPUT  DEBUG CONSOLE  TERMINAL  PORTS  COMMENTS                    zsh

todd@TMS-M1-Pro dwb_tailwind % npm run watch

todd@TMS-M1-Pro btc-d10 % drush cr
```

```
[1] Starting LiveReload v0.9.3 for /Users/todd/Sites/btc-d10/publ
ic_html/themes/custom/dwb_tailwind on port 35729.
[2] [10:57:03] Using gulpfile ~/Sites/btc-d10/public_html/themes/
custom/dwb_tailwind/gulpfile.js
[2] [10:57:03] Starting 'watch'...
```

```
todd@TMS-M1-Pro btc-d10 % drush cr
 [success] Cache rebuild complete.
todd@TMS-M1-Pro btc-d10 %
```

Ready to rock & roll

Make a change in .twig

⌘s -> see the change

> drush cr

for: break the page - “website encountered …”

Or, if nothing happens



Clear caches before freaking out

Check that you are editing the twig you think you are editing

Page Layout & Twig

Landing pages: Layout Builder
Content pages: Display Suite

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	Likes	Dislikes
Layout Builder (custom_page)	• **Each content item and view mode within a type can have its own layout** • Sections / blocks can be styled via classes • System blocks, fields … are easily accessible • Kind of wysiwyg experience	• Twig styling is opaque/cumbersome • Follows a HTML class, styling experience • Wysiwyg and side bar styling are downers • Control of titles / taxonomy names hard (class {hide}, not great)
Display Suite (ds)	• **Previous experience** • Page titles / taxonomy names can be controlled • ds fields can be blocks, tokens, twigs • Twig naming and field access allows for consistent design pattern	• Admin view is old style list of fields (and field groups if used) • Adding blocks is an extra step • Old dynamic fields are gone • Layouts apply to all content in a type

Twig: Naming

How will I figure out what I did later

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```
<!--  FILE NAME SUGGESTIONS:
    ▪ ds-1col--node--23339.html.twig
    ▪ ds-1col--node-career-big-card.html.twig
    ▪ ds-1col--node-career.html.twig
    ✅ ds-1col--node-big-card.html.twig
    ▪ ds-1col--node.html.twig
    ▪ ds-1col.html.twig
    ▪ ds-1col.html.twig
-->
```

Name suggestions provide different levels of specificity from:

- The content by ID (yuk)
- The type and view mode
- The type
- The view mode
- The node
- The page

ds_layouts

- ds-1col--node-article-full.html.twig
- ds-1col--node-big-card.html.twig
- ds-1col--node-career-full.html.twig
- ds-1col--node-company-profile-full.html.twig
- ds-1col--node-instruction-topic-teaser.html.twig
- ds-1col--node-job-area-full.html.twig
- ds-1col--node-people-in-biotech-full.html.twig
- ds-1col--node-skill-full.html.twig
- ds-1col--node-teaser-card.html.twig
- ds-1col--node-teaser.html.twig
- ds-1col--node-text-card.html.twig
- ds-1col--node-video-full.html.twig
- ds-1col--taxonomy-term-business-area-default.html.twig
- ds-1col--taxonomy-term-education-full.html.twig
- ds-1col--taxonomy-term-salary-full.html.twig
- ds-1col.html.twig

😀 Filenames identify content
☹️ Filenames mix content and view modes
Hint: content ends in -full.html.twig

Big cards have a consistent look and layout

Animal Technician



Animal technicians take care of the laboratory animals that are used in biotechnology research, veterinary research, and product testing. Laboratory animals play an important role ...

Minimum Education

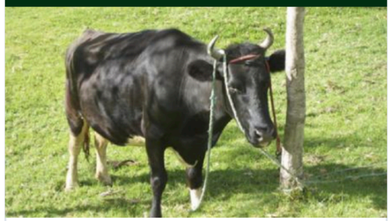
Assistant Cell Biologist



Nihaarika completed a Post Baccalaureate Certificate in Biotechnology at Madison College, and later a Masters degree at UW-Madison. She has worked as a Specimen Processing ...

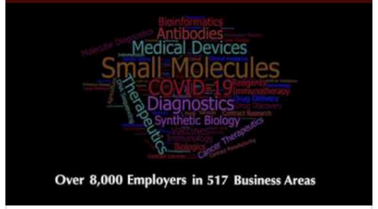
Education

Animal biotechnology



Animals are used in many ways in biotechnology. The animals in research labs help us better understand biology and serve as biological test systems. Other animals and animal ...

About Biotech Careers



A video that was prepared to showcase the site at the virtual NSF-ATE (National Science Foundation Advanced Technological Education) meeting October 2020.

Twig: Digging Deeper

Sorting taxonomy items in twig

Digital World Biology, LLC

Inconsistent D7 icon order

Agricultural Technician



Agricultural Technicians work to support the production and use of agricultural materials. They may perform agricultural research and / ... Learn more

Minimum Education

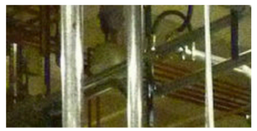
Animal Technician



Animal technicians take care of the laboratory animals that are used in biotechnology research, veterinary research, and product testing ... Learn more

Minimum Education

Biomanufacturing Technician - Upstream



Upstream processes are those in which biological materials are either obtained from an outside source or inoculated and grown in culture ... Learn more

Minimum Education

Cell Culture Technician



Cell culture technicians grow living cells in culture flasks, bioreactors, plates and other kinds of containers. The types of cells they ... Learn more

Minimum Education

Initially inconsistent in D10 too

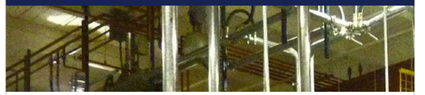
Animal Technician



Animal technicians take care of the laboratory animals that are used in biotechnology research, veterinary research, and product testing. Laboratory animals play an important role ...

Minimum Education

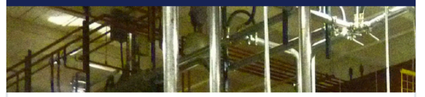
Biofuel Technician



Biofuel technicians carry out work involved in producing biofuels such as ethanol and biodiesel.

Minimum Education

Biomanufacturing Technician - Upstream



Upstream processes are those in which biological materials are either obtained from an outside source or inoculated and grown in culture, under controlled conditions, to ...

Minimum Education

Cell Culture Technician



Cell culture technicians grow living cells in culture flasks, bioreactors, plates and other kinds of containers. The types of cells they grow can come from plants, animals, fungi ...

Minimum Education

Twig: Digging Deeper

Sorting taxonomy items in twig

Digital World Biology, LLC

Consistent D10 icon order



Consistent with the manually sorted taxonomy terms

Name	Status	Operations
High School	Published	Edit
Certificates	Published	Edit
Associates degree	Published	Edit
Bachelors degree	Published	Edit
Masters degree	Published	Edit
Ph.D.	Published	Edit

Twig: Digging Deeper

Sorting taxonomy items in twig

Digital World Biology, LLC



Field suggestions are similar, but do not include a view mode.

```
<!-- FILE NAME SUGGESTIONS:
   ▪ field--ds-field-default.html.twig
   ▪ field--node--field-min-education--career.html.twig
   ✅ field--node--field-min-education.html.twig
   ▪ field--node--career.html.twig
   ▪ field--field-min-education.html.twig
   ▪ field--entity-reference.html.twig
   ▪ field.html.twig
-->
```

FYI: Long discussions in taxonomy issues on why sorting is not an out-of-the-box capability

Twig snippets: flex layout based on icon view mode

```
{% set view_mode = items.0.content['#view_mode'] %}
{# {{ dd(view_mode) }} #}
{# field.html.twig uses a leading {% if label %} logic #}
{% if 'icon' in view_mode %}
  {% set classes = classes|merge(['inline-flex']) %}
{% endif %}
```

```
  {% if 'icon' in view_mode %}
    <div class="field__items inline-flex pl-3 space-x-4 border-l-2
border-slate-400" >
  {% else %}
    <ul class="">
  {% endif %}
```

Twig snippet: sort and display

```
  {%
    for item in items|sort ((a, b) =>
    a.content['#taxonomy_term'].weight.value
    <=> b.content['#taxonomy_term'].weight.value)
  %}
  {# debug {{ dd(item.content['#taxonomy_term'].weight.value ) }} #}
    <div{{ item.attributes.addClass('field__item') }}>
      {% if 'icon' in view_mode %}
        {{ item.content }}
        {# {% set weight = item.content['#taxonomy_term'].weight.value %}
        {{ weight }} #}
      </div>
    {% else %}
      <li class="">{{ item.content }}</li>
    {% endif %}
  {% endfor %}
```

Twig: Digging Deeper

Accessing data

Digital World Biology, LLC

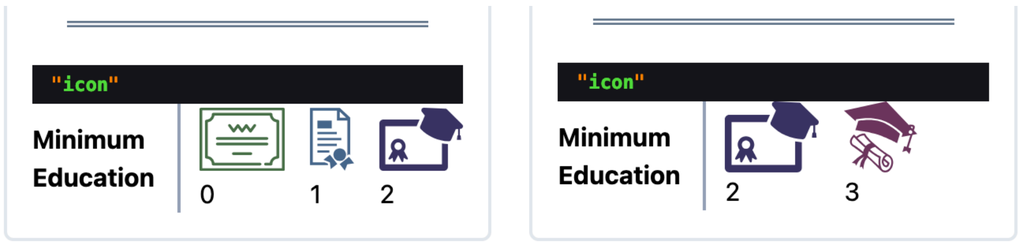
dump(var) or dd(var)

```
{% set view_mode = items.0.content['#view_mode'] %}
{# {{ dd(view_mode) }} #}
```

```
{%
  for item in items|sort ((a, b) =>
  a.content['#taxonomy_term'].weight.value
  <=> b.content['#taxonomy_term'].weight.value)
%}
{# debug {{ dd(item.content['#taxonomy_term'].weight.value ) }} #}
```

uncomment ⌘/

save ⌘s



Debug set in settings.yml

```
{{ dd(items)}}
{{ dd(view_mode) }}
```

```
array:3 [▼
  0 => array:2 [▶]
  1 => array:2 [▶]
  2 => array:2 [▶]
]

"icon"
```

```
array:3 [▼
  0 => array:2 [▼
    "content" => array:6 [▼
      "#taxonomy_term" =>
Drupal\…\Term {#5356 ▶}
      "#view_mode" => "icon"
      "#cache" => array:5 [▶]
      "#theme" => "taxonomy_term"
      "#weight" => 0
      "#pre_render" => array:1 [▶]
    ]
    "attributes" =>
Drupal\…\Attribute {#5451 ▶}
  ]
```

```
Drupal\…\Term {#5356 ▼
        #entityTypeId: "
taxonomy_term"
        #enforceIsNew: null
        #typedData:
Drupal\…\EntityAdapter {#5362 ▶}
        #cacheContexts: []
        #cacheTags: []
        #cacheMaxAge: -1
        #_serviceIds: []
        #_entityStorages: []
        #values: array:20 [▼
          "tid" => array:1 [▶]
          "revision_id" => array:1 [
▶]
          "vid" => array:1 [▶]
          "uuid" => array:1 [▶]
          "langcode" => array:1 [▶]
          "revision_user" => array:1
[▶]
          "revision_created" =>
array:1 [▶]
          "revision_log_message" =>
array:1 [▶]
          "revision_default" =>
array:1 [▶]
          "isDefaultRevision" =>
array:1 [▶]
          "status" => array:1 [▶]
          "name" => array:1 [▶]
          "description" => array:1 [
▶]
          "changed" => array:1 [▶]
          "default_langcode" =>
array:1 [▶]
          "
revision_translation_affected" =>
array:1 [▶]
          "weight" => array:1 [▼
            "x-default" => "2"
          ]
```

Will item.content{‘#5356’}[‘#values’][‘weight’].0.[‘x-default’] work?

Drupal\… \Term

Twig: Digging Deeper

Accessing data

Digital World Biology, LLC

Nope

ChatGPT put me on the path

dd(items.0.content['#taxonomy_term'] lists values in Drupal\taxonomy\Entity\Term but I cannot access them



```
{%
  for item in items|sort ((a, b) =>
  a.content['#taxonomy_term'].weight.value
  <=> b.content['#taxonomy_term'].weight.value)
%}
{# debug {{ dd(item.content['#taxonomy_term'].weight.value ) }} #}
  <div{{ item.attributes.addClass('field__item') }}>
    {% if 'icon' in view_mode %}
      {{ item.content }}
      {# {% set weight = item.content['#taxonomy_term'].weight.value %}
      {{ weight }} #}
    </div>
  {% else %}
    <li class="">{{ item.content }}</li>
  {% endif %}
{% endfor %}
```

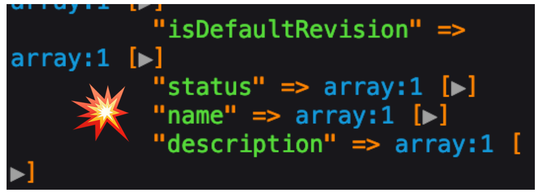
When you see values listed in `dd(items.0.content['#taxonomy_term'])`, you're viewing the rendered content, but accessing those values directly can be tricky. In Twig, to access properties from a `Drupal\taxonomy\Entity\Term` object referenced in a field, you generally use the `entity` property, like this:

twig — Copy code

```
{% set term = items.0.content['#taxonomy_term'] %}
<p>{{ term.name.value }}</p>
<p>{{ term.get('field_custom').value }}</p>
```

If you're still having trouble, ensure that the term object is correctly referenced and check for any nested arrays or objects.

Key hint



ChatGPT

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August

- Count Text Line Wraps
- Adjusting Flexbox in Safari
- Tailwind CSS Not Working
- Counting Numbered Arrays in Twi
- Dynamic Height in CSS
- Get Node Body Summary
- Sorting and Slicing Items
- Excluding Title from Output
- Contextual Filter Values
- Active Link in Twig
- Twig Access Syntax
- Drupal Twig Taxonomy Values
- Twig Switch Statement Usage
- Move Data Based On Match
- Accessing Taxonomy Field Value
- Refactor Style Name First
- Adding Classes to Images
- Finding Field Names Twig

September

- Composer Command Not Found
- View Display Type Explained
- Adding Fields to Array
- Padding-top Issue Tailwind
- Filtering Items in Twig

Previous 30 Days

- CSV Migration Node Update
- Call Python Program in Drupal
- Country Code List
- Drupal Migrate GeoJSON State
- Drupal Views Rendered Entity
- Edit Snippets Visual Studio Mac
- Accessing Node ID in Drupal
- Views-view ID Explanation
- Responsive Card Height Tailwind
- Twig Template Details
- Custom Keybindings in VS Code
- Understanding Twig Templates
- Passing Data to Title Prefix
- Override Taxonomy Title
- Adding Classes Dynamically
- Testing Class Presence

Overall pretty good

Some clear losers

Easier than googling and digging though slashdot



ChatGPT: Helpful Example

Styling an “active” link

Digital World Biology, LLC

D7 views added an “active” that could be styled

D10 it’s gone

View a Career

- **Agricultural Technician**
- Animal Technician
- Biofuel Technician
- Biomanufacturing Technician - Downstream
- Biomanufacturing Technician - Upstream
- Cell Culture Technician
- Clinical Research Associate
- Compliance Specialist
- Environmental Health & Safety Technician
- Environmental Science and Protection Technician
- Facilities Technician
- Food Sample Inspector
- Food Technologist

I can get the nid of the link and if it matches the nid of the displayed page, it’s active

Just need the page nid …

```
I have content element in field element -
Drupal\Core\Entity\Plugin\DataType\EntityAdapter {#1338 ▼
    #definition: Drupal\Core\Entity\TypedData\EntityDataDefinition
{#1337 ▶}
    #name: null
    #parent: null
    #_serviceIds: []
    #_entityStorages: []
    #stringTranslation: null
    #typedDataManager: null
    #entity: Drupal\node\Entity\Node {#1297}
  }
  #cacheContexts: []
  #cacheTags: []
  #cacheMaxAge: -1
  #_serviceIds: []
  #_entityStorages: []
  #values: array:35 [▼
    "nid" => array:1 [▼
      "x-default" => "23339"
    ]    #cacheTags: []
  #cacheMaxAge: -1
  #_serviceIds: []
  #_entityStorages: []
  #values: array:35 [▶]
```

The query



Ideas

Clarification

Nope the entitiy adaptor is in an element {{ dd(element) }} shows the structure

ChatGPT: The Solution

Styling an “active” link

Digital World Biology, LLC

Aha

Got it! Since the `EntityAdapter` is part of an `element`, it seems you're inspecting the structure of a render array or a form element. To work with this `EntityAdapter`, you'll likely want to extract the underlying entity (like a node) in the preprocessing or rendering process.

If you're in a preprocess function, you can access the entity within the render array's `#object` or `#entity` key. Here's how to handle it in PHP:

dwb_tailwind.theme

```php
<?php

/**
 * Implements hook_preprocess_HOOK() for views_view templates.
 * TMS, 9/15 this bit of code gets the node id in the view for select_list
 * machine name in views unformatted display modes
 */

function dwb_tailwind_preprocess_views_view_unformatted__select_list(&$variables) {
  if ($node = \Drupal::routeMatch()->getParameter('node')) {
    $variables['page_node_id'] = $node->id();
    // echo $node->id();
  }
}
```

View a Career

Agricultural Technician

Animal Technician

Biofuel Technician

Biomanufacturing Technician - Downstream

Biomanufacturing Technician - Upstream

Cell Culture Technician

Clinical Research Associate

Compliance Specialist

Environmental Health & Safety Technician

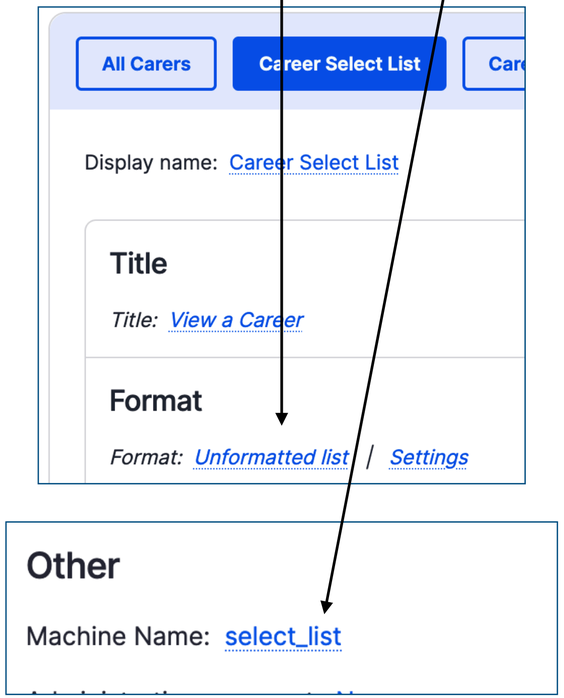
Environmental Science and Protection Technician

Facilities Technician

Food Sample Inspector

Food Technologist

views_view_unformatted__select_list



I have more. It’s a design pattern

ChatGPT: Select List Twig

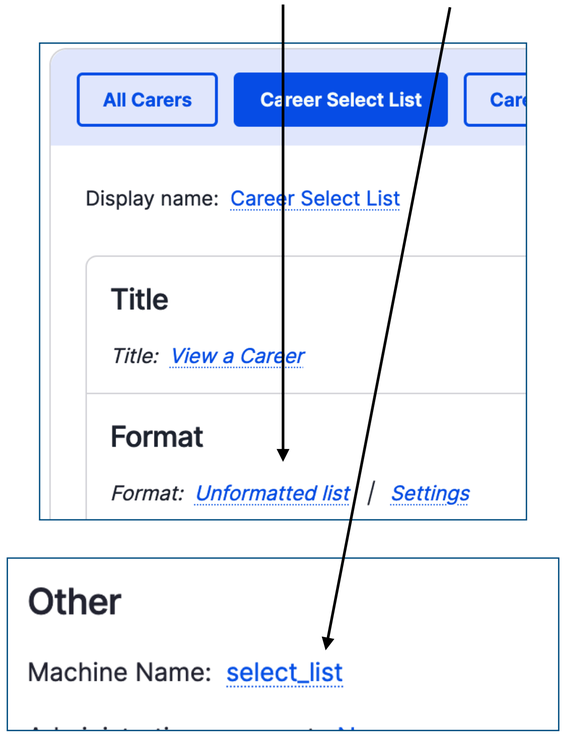
Styling an “active” link

Digital World Biology, LLC

View a Career

- Agricultural Technician
- Animal Technician
- Biofuel Technician
- Biomanufacturing Technician - Downstream
- Biomanufacturing Technician - Upstream
- Cell Culture Technician
- Clinical Research Associate
- Compliance Specialist
- Environmental Health & Safety Technician
- Environmental Science and Protection Technician
- Facilities Technician
- Food Sample Inspector
- Food Technologist

views_view_unformatted__select_list



views_view_unformatted__select_list.html.twig

```
{% if title %}
  <h3>{{ title }}</h3>
{% endif %}
{% for row in rows %}
  {%
    set row_classes = [
      default_row_class ? 'views-row',
      'pb-2',
    ]
  %}
  <div{{ row.attributes.addClass(row_classes) }}>
    {# does the row's node id match the page's node id; page_node_id is set
       in the .theme file #}
    {% set row_node_id =
          row.content['#row']._entity.nid.value %}
    {% if row_node_id == page_node_id %}
      {%
        set active_classes = [
          'select-list active',
          'block text-[120%] text-black font-semibold p-2 my-1 leading-6',
          'bg-gradient-to-r from-[#b5eadd] to-[#dcffdb] -m-2',
        ]
      %}
      <div{{ attributes.addClass(active_classes) }}>
        {{- row.content -}}
      </div>
    {% else %}
      {{- row.content -}}
    {% endif %}
  </div>
{% endfor %}
```

Views and Twig: Naming

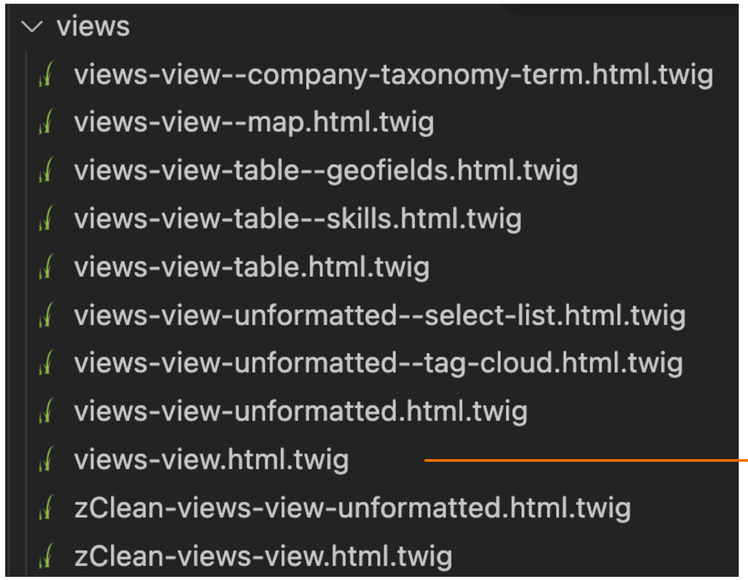
Suggestions exist … but they are not in the web page

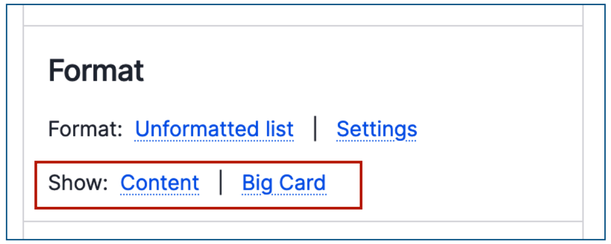
Digital World Biology, LLC

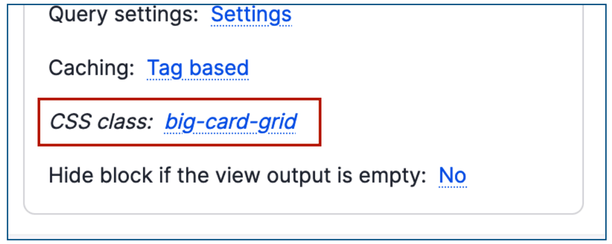
```
{#
  see https://www.drupal.org/docs/develop/theming-drupal/twig-in-drupal/twig-template-naming-conventions
  for naming conventions, they are not added to twig suggestions
#}
```



Names control granularity & specificity







High level logic set by view mode and display css class

```
{# set row class based on view class settings #}
{% if view_mode == 'big_card' and 'grid' in css_class %}
  {% set rows_class = "class=dwb-grid-300" %}
  {# moved to views-view--company-taxonomy..., but might use
     more generally #}
{% elseif view_mode == 'text_card' and 'grid' in css_class %}
  {% set rows_class = "class=dwb-grid-260" %}
{% elseif view_mode == 'teaser_card' and 'flex' in css_class %}
  {% set rows_class = "class=dwb-flex" %}
```

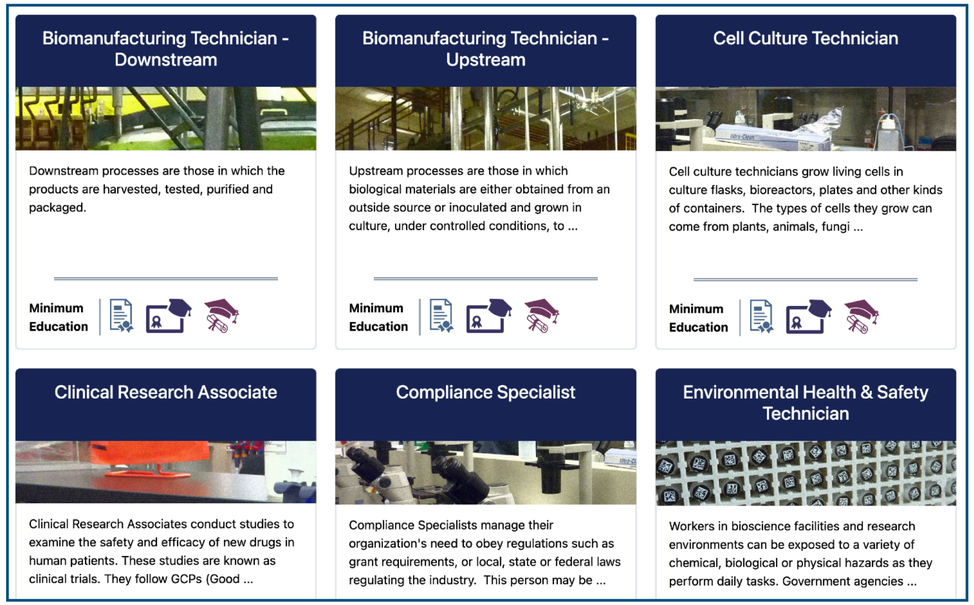
Views and Twig: Control Logic

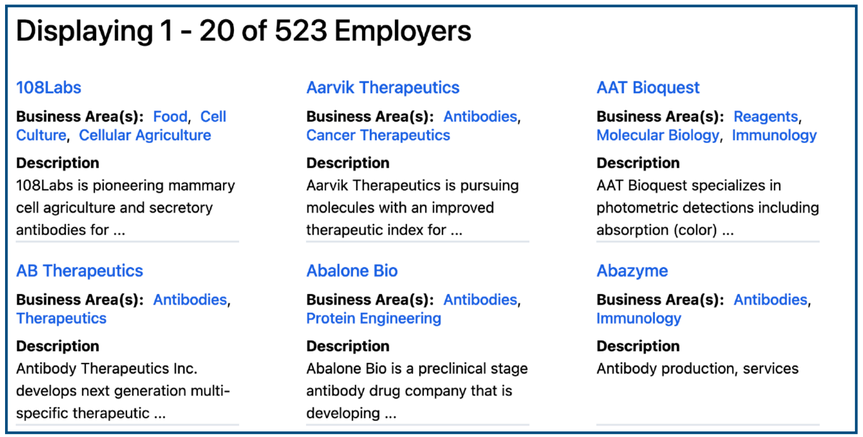
Digital World Biology, LLC

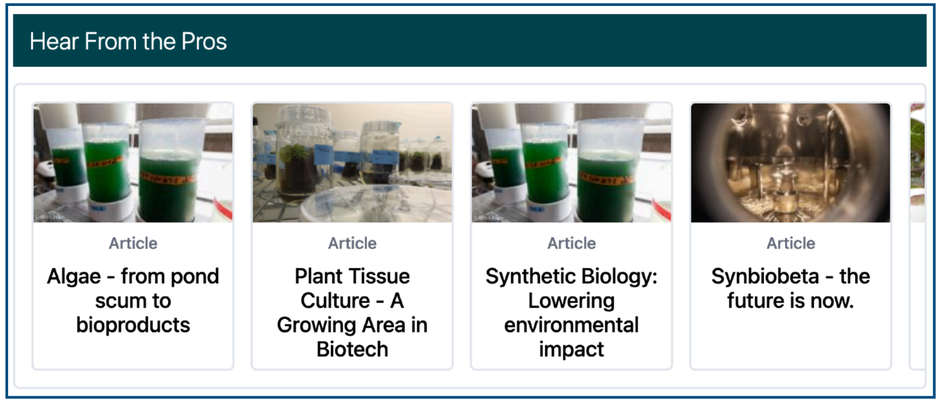
Control logic twigs and formatting/styling twigs for content

view-views.html.twig

```
{# set row class based on view class settings #}
{% if view_mode == 'big_card' and 'grid' in css_class %}
  {% set rows_class = "class=dwb-grid-300" %}
  {# moved to views-view--company-taxonomy..., but might use
     more generally #}
{% elseif view_mode == 'text_card' and 'grid' in css_class %}
  {% set rows_class = "class=dwb-grid-260" %}
{% elseif view_mode == 'teaser_card' and 'flex' in css_class %}
  {% set rows_class = "class=dwb-flex" %}
```







Views and Twig: Control Logic

Digital World Biology, LLC

Control logic twigs and formatting/styling twigs for content

view-views-unformatted.html.twig

```
{% set cardlink = "" %}
    {% if 'big_card' in view_mode %}
      {% set card_classes = [ 'dwb-link-card', 'max-w-[450px]' ] %}
      {% set nid = row.content['#node'].nid.value %}
      {% set cardlink = '<a class="cardlink" href="/node/' ~ nid ~
                        '">link</a>' %}

    {% elseif 'teaser_card' in view_mode %}
      {% set card_classes = [ 'dwb-link-card', 'min-w-[200px]
                              max-w-[200px]' ] %}
      {% set nid = row.content['#node'].nid.value %}
      {% set cardlink = '<a class="cardlink" href="/node/' ~ nid ~
                        '">link</a>' %}

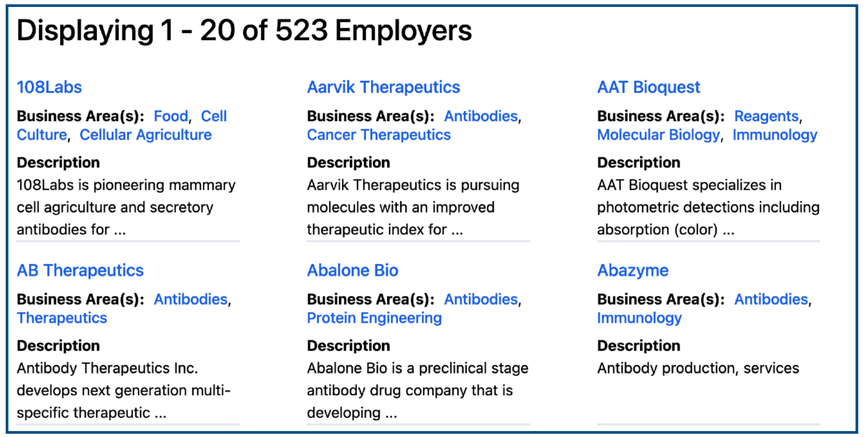
    {% elseif 'text_card' in view_mode %}
      {% set card_classes = [ 'relative', 'border-b-2', 'min-w-[240px]
                              max-w-[240px]' ] %}

    {% else %}
      {% set card_classes = [] %}
    {% endif %}

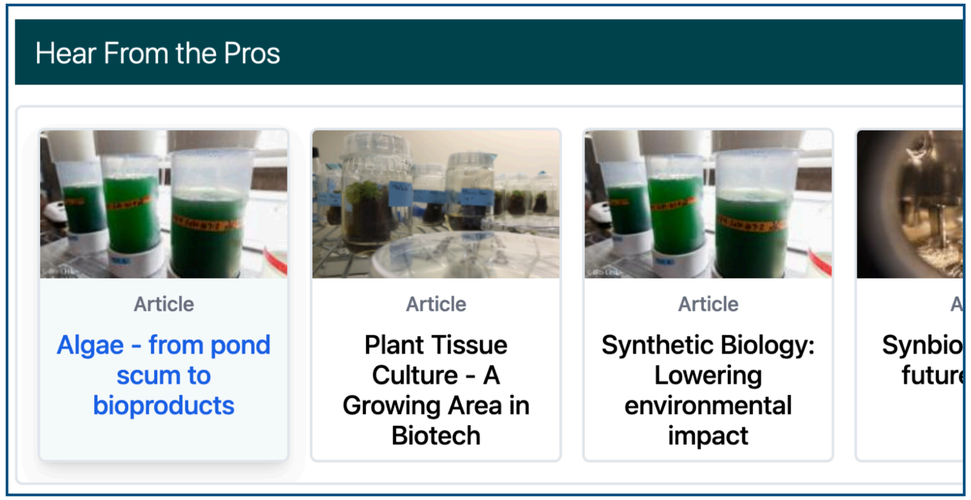
    <div{{ row.attributes.addClass(row_classes, card_classes)}}>
      {{- row.content -}}
      {# use raw to display html else cardlink prints a string #}
      {{ cardlink|raw }}
    </div>
```

Card widths, cardlink yes/no

The card link needs to apply to the views-row



Links are in the cards

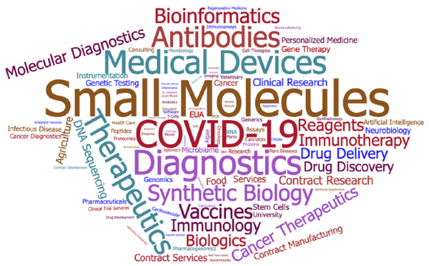


Views and Twig: Word Clouds

Digital World Biology, LLC

Great way to see how much content is associated with a word/term

Business Areas - Job Areas - Careers



Top 100 Terms: Click the image to see it full size.

Biotech companies range in sized from startups that employ a few individuals to large multinational organizations that employ tens of thousands to over 100 thousand individuals. Similarly, companies can have a singularly focused business activity to several divisions with each one focused on one or more business areas. Job areas follow a similar pattern. Some kinds of jobs are specialized for a particular business area and other jobs, such as those related to documentation or quality control broadly support many business areas. This page shows how different terms that describe business areas, job areas and careers could interrelate. The word clouds use size and color to indicate how often a particular term is used. Working definitions are as follows:

- Business Area = The kind of work, or area of investigation performed a company
- Job Area = The kind of work that is performed to support a business area
- Entry Jobs = How a career can be developed for different jobs and business areas

Biotechnology Business Areas

3D cell culture 3D Printing AAV Acquisitions Adenovirus Adjuvants ADME-tox Aerospace Agbiotech Aging Agriculture Agtech Algae Allergy ALS Alternative protein Alzheimer's Analytical Chemistry Analytical Services Ancestry Animal Care Animal Models Animal Nutrition

Job Areas

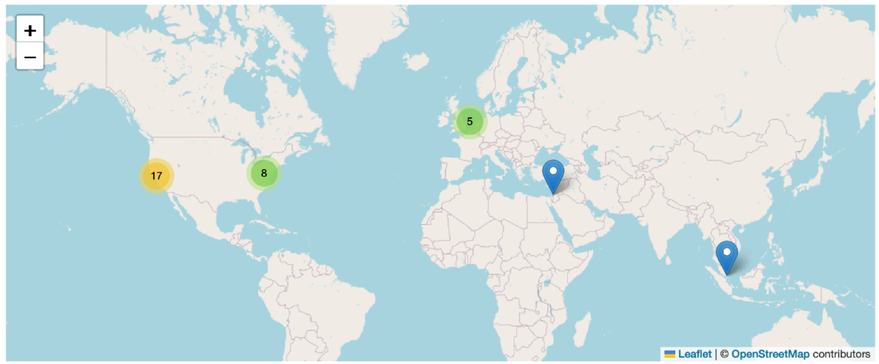
Agricultural biotechnology | Animal biotechnology | Aquaculture | Biodefense | Biofuels | Biomanufacturing | Biomaterials | Biopharmaceuticals | Bioprocessing | Biotechnology | Cell culture | Conservation biology | Cosmetics | Documentation | Drug discovery | Education |

Careers

Agricultural Technician | Animal Technician | Biofuel Technician | Biomanufacturing Technician - Downstream | Biomanufacturing Technician - Upstream | Cell Culture Technician | Clinical Research Associate | Compliance Specialist | Environmental Health & Safety Technician | Environmental

View by:
- World
- United States

30 Employers in 32 Locations



Companies working on Aging work in 23 other areas.

Therapeutics (6) | Cell and Gene Therapy (6) | Regenerative Medicine (3) | Diagnostics (3) | Artificial Intelligence (3) | Synthetic Biology (2) | Stem Cells (2) | Small Molecules (2) | Epigenetics (2) | Alzheimer's (2) | Veterinary (1) | Skin (1) | Rare Diseases (1) | Protein Kinase (1) | Pets (1) | Metabolism (1) | Inflammation (1) | Genomics (1) | Genetic Testing (1) | Drug Discovery (1) | Cells (1) | Blood (1) | Biologics (1)

Displaying 1 - 20 of 30 Employers

Age Labs

Business Area(s): Diagnostics, Aging

Description
Age Labs is a Norwegian life science company that discovers, develops and ...

AgeCurve

Business Area(s): Aging, Genomics, Diagnostics

Description
Smarter and cheaper way to measure scaleable single cell somatic mutation burden ...

AgeX Therapeutics

Business Area(s): Therapeutics, Aging

Description
AgeX Therapeutics is focused on the development and commercialization of novel ...

Views and Twig: Word Clouds

Tag clouds for content and taxonomy terms
Great way to see how much content is associated with a word/term



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- Business Area = The kind of work, or area of investigation performed a company
- Job Area = The kind of work that is performed in a business area
- Career = A career can be developed in job areas and business areas

Taxonomy | Content | Content

Biotechnology Business Areas

3D cell culture 3D Printing AAV Acquisitions Adenovirus Adjuvants ADME-tox Aerospace Agbiotech Aging Agriculture Agtech Algae Allergy ALS Alternative protein Alzheimer's Analytical Chemistry Analytical Services Ancestry Animal Care Animal Models Animal Nutrition

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TagClouds word cloud

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In D7 used TagClouds

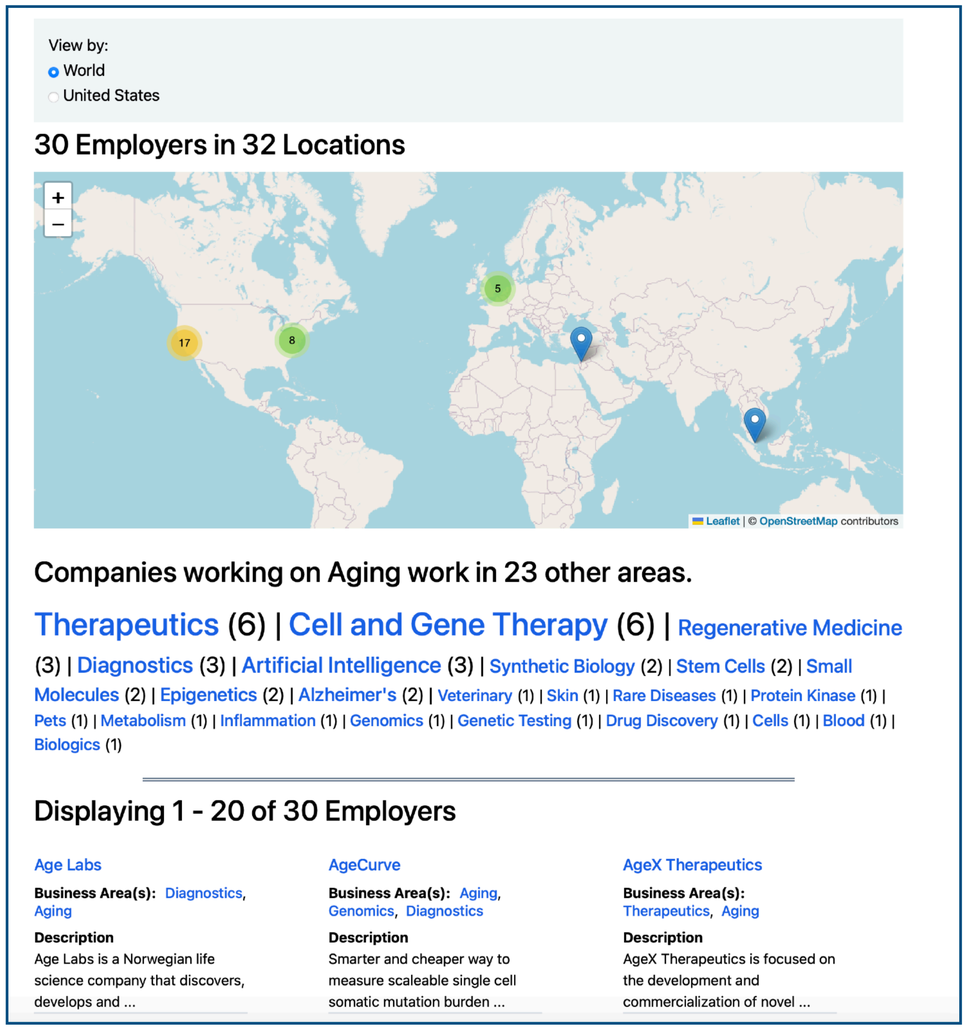
TagClouds is a D10 module

But, only for taxonomy ☹

Views and Twig: Word Clouds

Tag clouds for content and taxonomy terms
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In D7 Views PHP was used



Can we do this with twig instead?

Views and Twig: Word Clouds

Digital World Biology, LLC

Tag clouds for content and taxonomy terms
Great way to see how much content is associated with a word/term

*Of course we can!**

view-views-unformatted—tag-cloud.html.twig

```
{% set min = null %}
{% set max = null %}
<ul class="pipe-list px-4">

{% for row in rows %}
  {% if "views_view_fields__company_business_areas__tag_cloud" in
    row.content['#theme'] %}
    {% set count = row.content['#row'].node_field_data_taxonomy_index_nid %}
  {% elseif "views_view_fields__careers" in row.content['#theme'] %}
    {% set count =
    row.content['#row'].field_related_careers_node_field_data_title %}
  {% else %}
    {% set count =
    row.content['#row'].field_related_job_areas_node_field_data_title %}
  {% endif %}

  {% if min is null or count < min %}
    {% set min = count %}
  {% endif %}

  {% if max is null or count > max %}
    {% set max = count %}
  {% endif %}
{% endfor %}

{# Set the range, min_font, max_font for font scaling #}
{% set range = max - min %}
{% set min_font_size = 18 %} {# Minimum font size, for example 14px #}
{% set max_font_size = 36 %} {# Maximum font size, for example 36px #}
```

Part I: compute the min and max values in the dataset

```
{# Now, scale font size by each value's relation to the min and max #}
{% for row in rows %}
   {%
    set row_classes = [
      default_row_class ? 'views-row',
    ]
  %}
  {% if "views_view_fields__company_business_areas__tag_cloud" in
    row.content['#theme'] %}
    {% set count = row.content['#row'].node_field_data_taxonomy_index_nid %}
  {% elseif "views_view_fields__careers" in row.content['#theme'] %}
    {% set count =
    row.content['#row'].field_related_careers_node_field_data_title %}
  {% else %}
    {% set count =
    row.content['#row'].field_related_job_areas_node_field_data_title %}
  {% endif %}

  {% if range > 0 %}
    {# Calculate the proportional font size between min and max font size #}
    {% set font_size = (((count - min) / range) *
    (max_font_size - min_font_size) + min_font_size)|integer %}
  {% else %}
    {% set font_size = min_font_size %}
  {% endif %}

  <li style="font-size: {{ font_size }}px;">{{- row.content -}}</li>
{% endfor %}
</ul>
```

Part II: use the counts, min, max to scale and set font sizes

* Assistance from ChatGPT

Twig: Getting Data and Syntax

dd(object.thing[index][‘#associative-array’].item.value)



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```
{% set field_name = elements['content'][0]['#field_name'] %}

{% if ds_content['dynamic_block_field:node-hear_from_the_pros'] %}

{% if ds_content.field_related_video['#object'] %}

{{ ds_content.body }}

{% set nid = item.content['#node'].nid.value %}

{% set view_mode = item.content['#view_mode'] ?? null %}

{% set row_node_id = row.content['#row']._entity.nid.value %}

a.content['#taxonomy_term'].weight.value
```

Not always clear, patterns emerged

“-“, vs “—“, vs “_”, vs “__”

There are rules, but also exceptions

Next Steps and Thoughts

Step 4: Production Ready

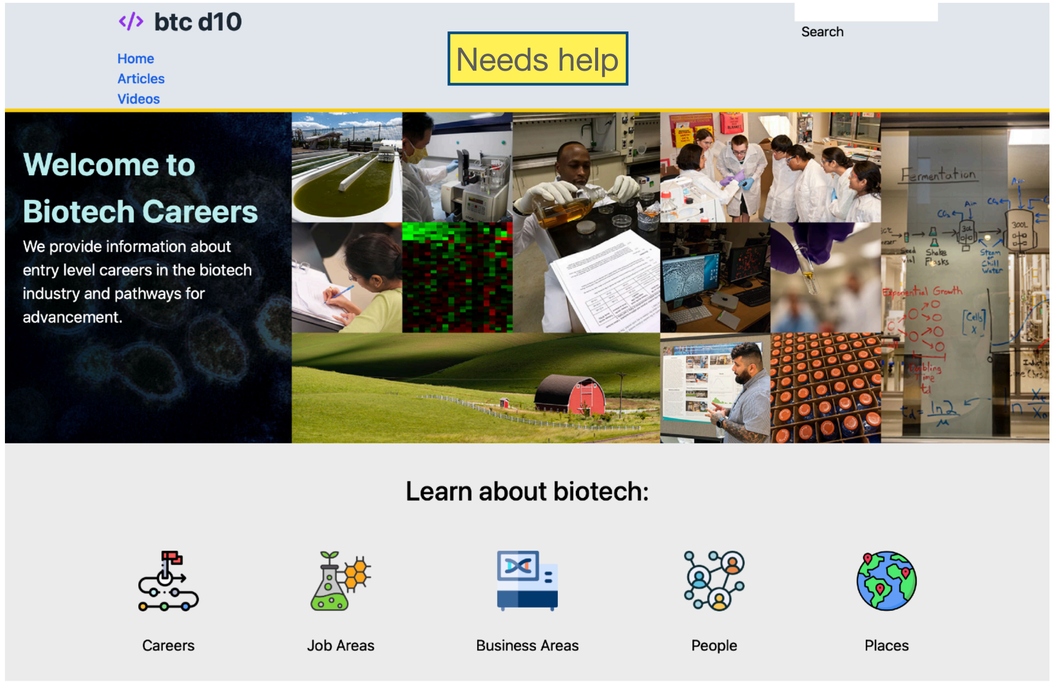
Git, configuration management, detailed punch list

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To do

- Configuration Management
- Git Management (started …)
- UI work
  - Nav region
  - Edit/input form twigs (search …)
  - Views filters
  - Bootstrap css to steal (buttons)
- Make a production check list - turn off dev settings
  - settings.php (verify production / local separation)
  - services.yml (reset the debugging, twig caching params)
  - html.html.twig - auto reload
  - Compile tailwind css
  - Figure out what was missed
- Code clean up (unused twigs), refactoring (tag_cloud)



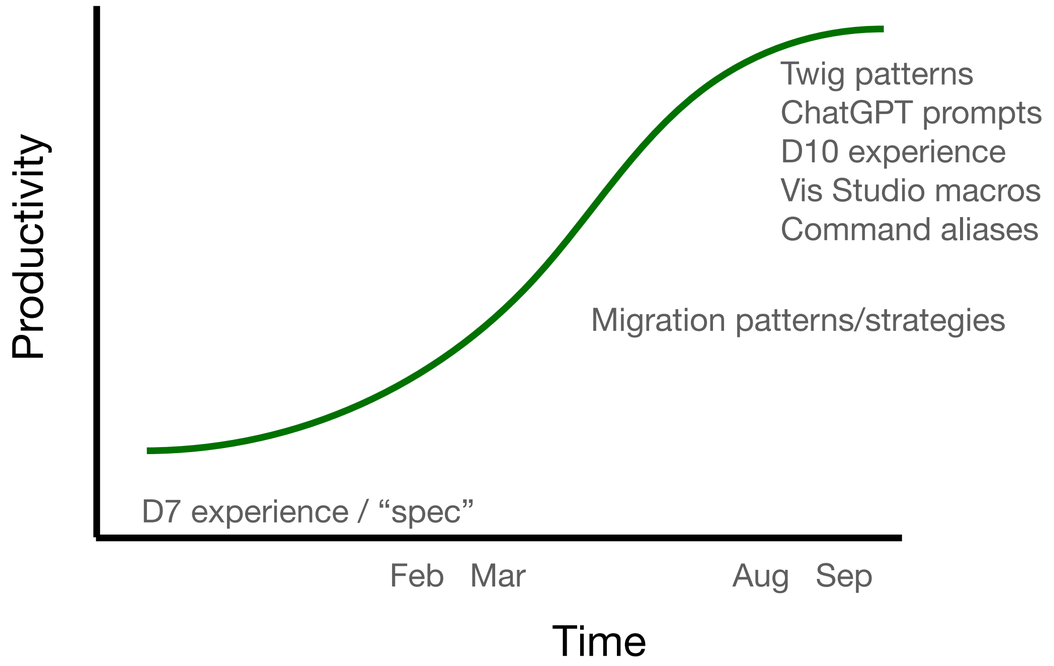


Streamline checkout, build, migrate
Then checkout, update (dev/test/prod.)

Things I love

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- Important modules made the D7, 8, 9, 10 journey
- Only missing 😀 ☹️
  - Views pivot table
  - Token embed views
- Twig and tailwind speed up development - great SeaDug advice
- Many D7 modules used for conditionals, field formatting are no longer needed
- Overall have fewer modules & less complex content configuration



Things I Don’t Love

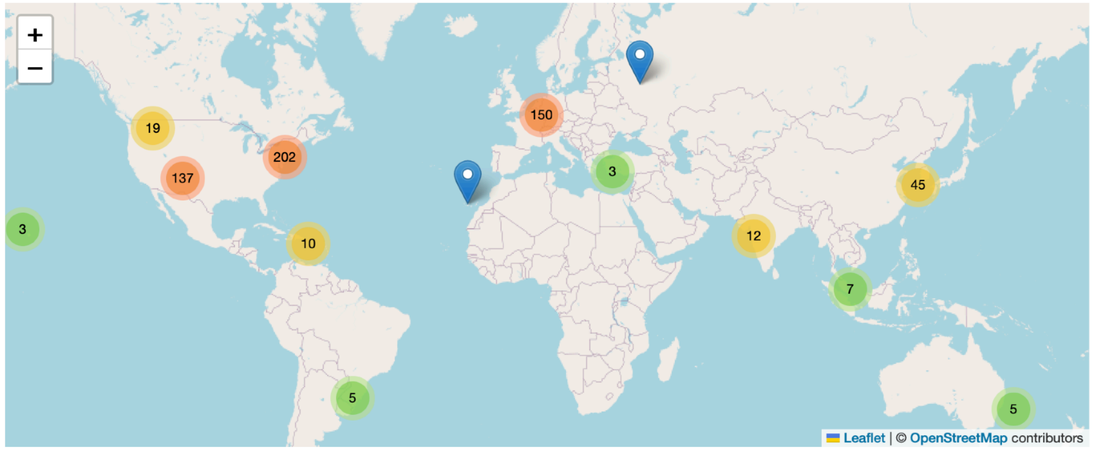
Address fields and geocode fields are decoupled

Digital World Biology, LLC

Employers Working on Biologics

View by:
- World
- United States

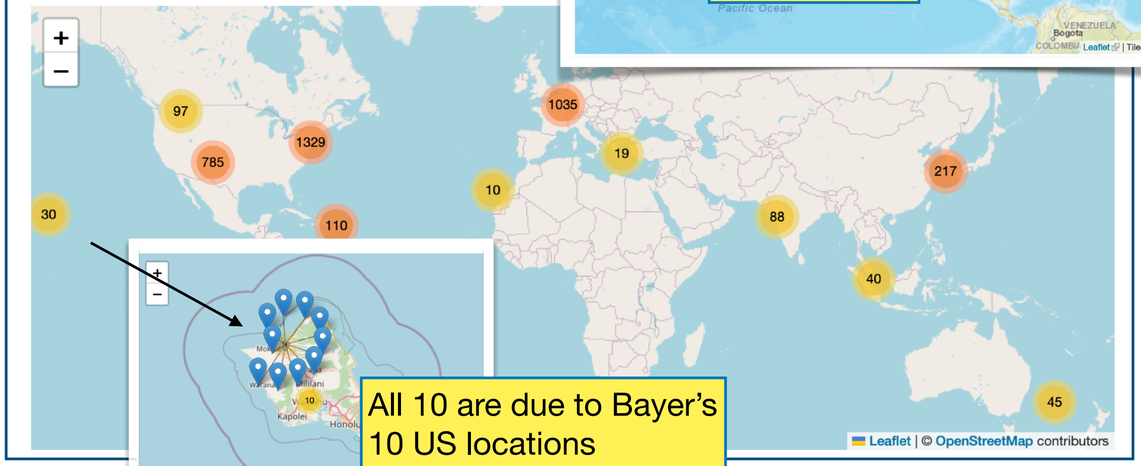
221 Employers in 600 Locations

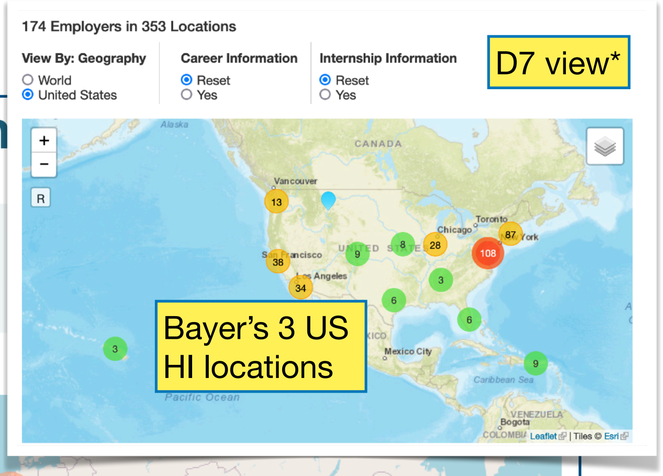


Employers Working on

View by:
- World
- United States

174 Employers in 353 Locations







Filtering on US companies shows more locations! This is due to address fields and geofields being separate entities. The number of employers and locations are correctly filtered, but the filtered map displays all US location instances for each company with a US location.

The good news is that the order and number of fields are aligned.



* The first implementation displayed too many locations too. Those were denormalized by taxonomy. Three terms, three locations plotted. That was solved with views_distinct, a D7 only module

Things I Don’t Love

Views are slower!



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Query	SELECT node.title AS node_title, node.nid AS nid FROM {node} node WHERE (((node.status = '1')))
Title	Company names
Path	company-names
Query build time	0.23 ms
Query execute time	17.38 ms
View render time	1816.1 ms

D7: Displaying 1 - 10655 of 10655 Titles

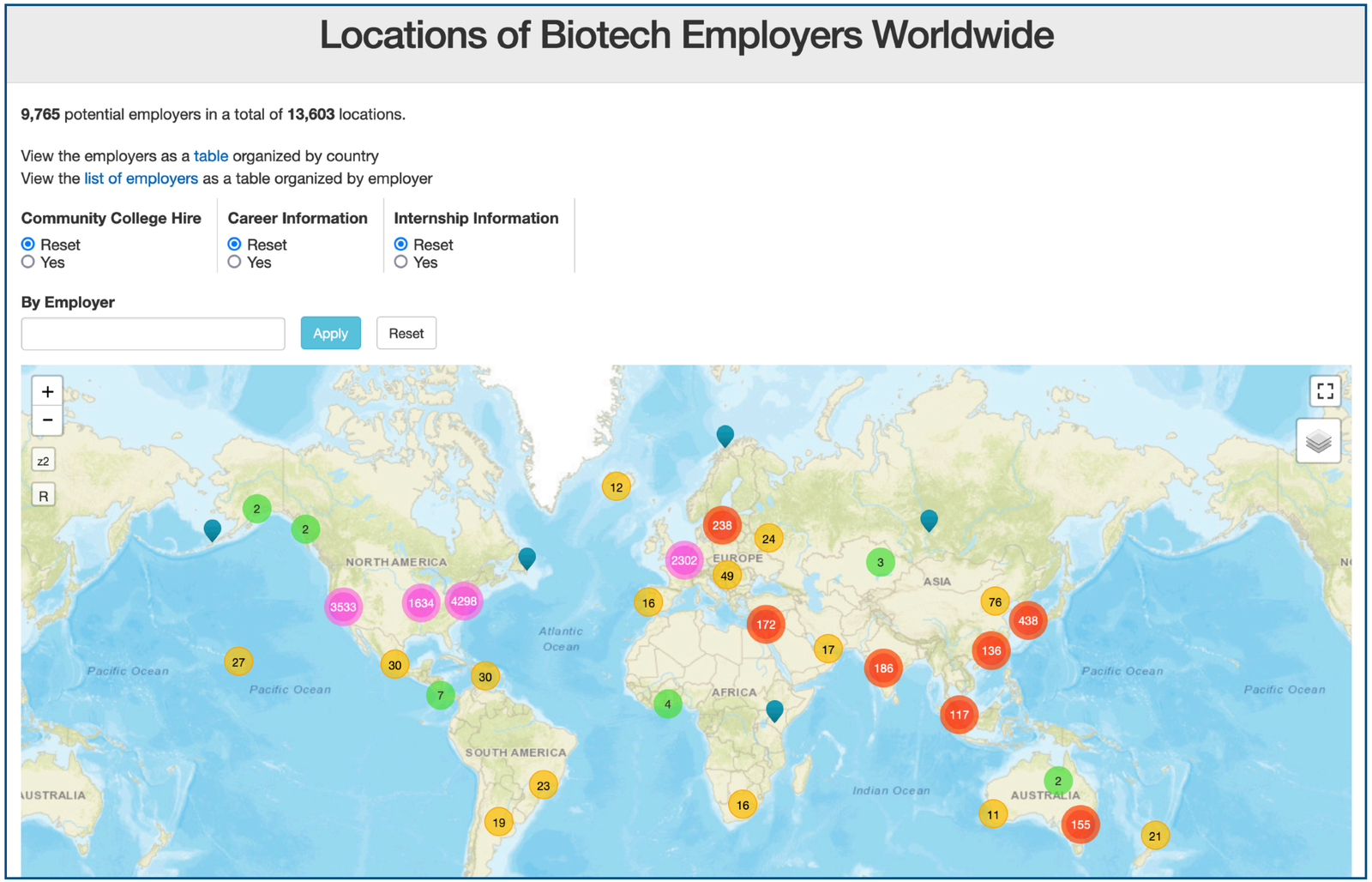
D10: Displaying 1 - 9647 of 9647 Titles

Query	SELECT "node_field_data"."created" AS "node_field_data_created", "node_field_data"."nid" AS "nid" FROM {node_field_data} "node_field_data" WHERE ("node_field_data"."status" = '1') AND ("node_field_data"."type" IN ('company_profile')) ORDER BY "node_field_data_created" DESC
Title	company titles
Path	/company-titles
Query build time	0.99 ms
Query execute time	668.8 ms
View render time	11392.02 ms

This Experience is Bad

Without some kind of pre-cache - headless option

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D7 loads in few seconds, then fast

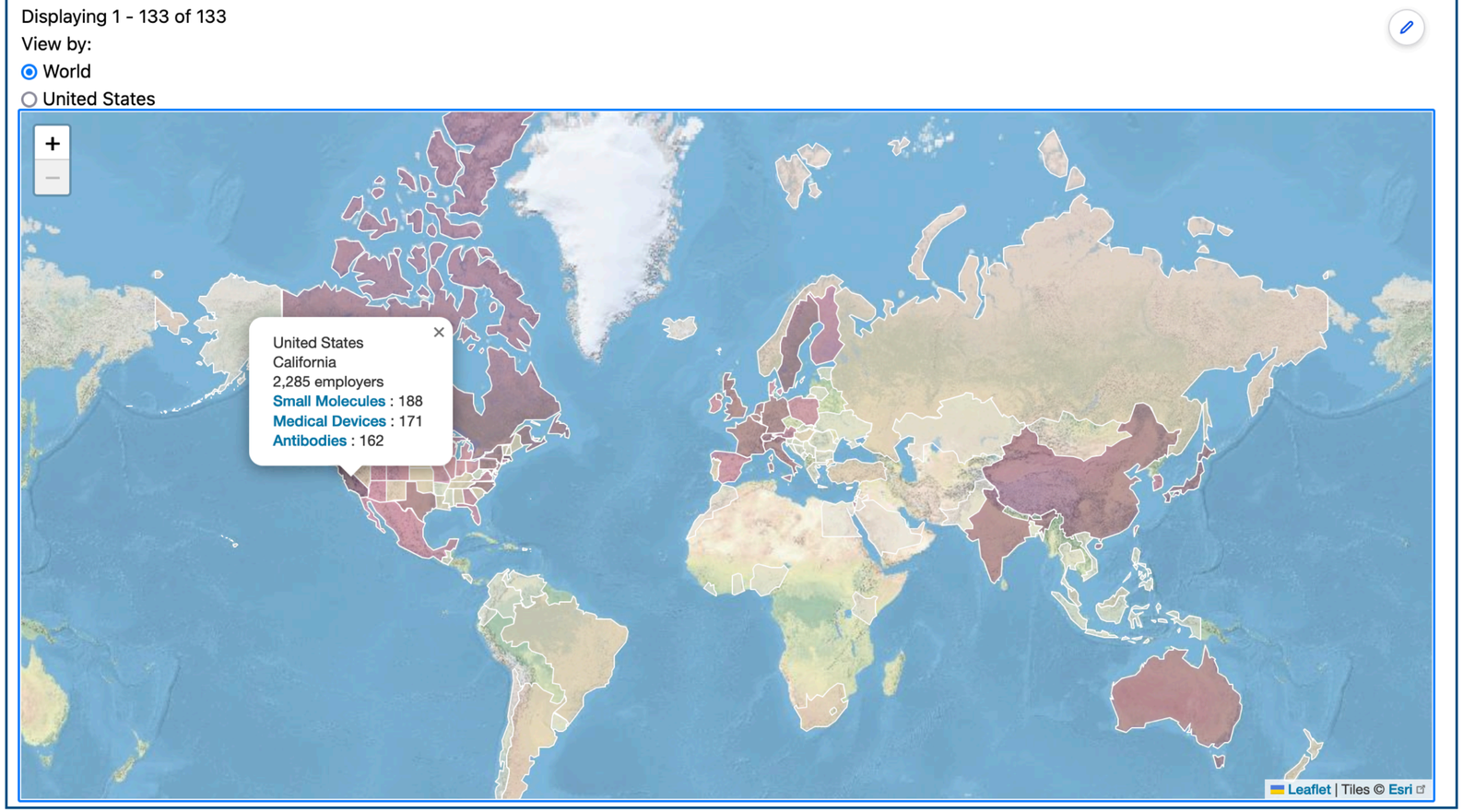
D10 loads in view preview (with errors), page load -> 500 error, then fast

Silver Lining

Obstacles create new opportunities

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Biotech Landscape



Choropleth approach

- ~13,000 instances (locations) becomes 200 instances (countries & states)
- Requires
  - Geo-boundary data (json) ~onetime deal
  - Views counts / filters (semi-frequent updates)

choropleth map

[cartography] A thematic map in which areas are styled to represent the variation of values for a single variable, such as Average Household Income. From the Greek terms *choro* meaning place or land, and *pleth* meaning full.
A bivariate choropleth map—also called a relationship style—is a thematic map that displays two or more variables on a single map by combining different sets of symbols.

https://support.esri.com/en-us/gis-dictionary/choropleth-map

Last Thought

Drupal depends on continued use and success

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W3Techs
Web Technology Surveys

Usage statistics and market share of Drupal

Request an **extensive Drupal market report.**

Learn more

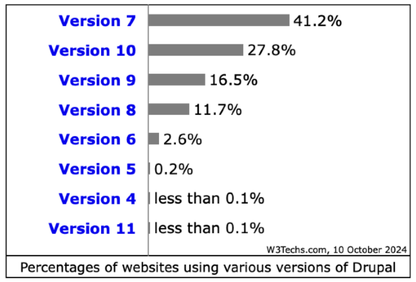
These diagrams show the usage statistics of Drupal as content management system on the web. See technologies overview for explanations on the methodologies used in the surveys. Our reports are updated daily.

> **Drupal is used by 1.3%** of all the websites whose content management system we know. **This is 0.9% of all websites**.

Versions of Drupal

This diagram shows the percentages of websites using various versions of Drupal.

How to read the diagram:
Version 7 is used by 41.2% of all the websites who use Drupal.

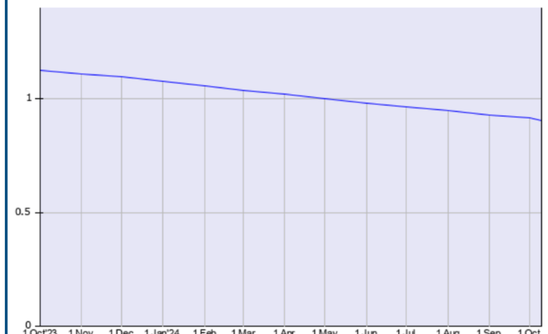


Percentages of websites using various versions of Drupal

Past year

Historical trend

This diagram shows the historical trend in the percentage of websites using Drupal.
Our dedicated trend survey shows more content management usage and market share trends.



Usage of Drupal, 10 Oct 2024, W3Techs.com



Transitioning D7 sites is a significant undertaking

Data Migration

Rebuilding

Dev Ops

Requires strong commitment to your site and the needed development

Starshot appears to focus on new entrants

Thank you

todd@digitalworldbiology.com

www.linkedin.com/in/todd-smith-5115b5

References used

https://understanddrupal.com/courses/31-days-of-migrations/

https://www.drupal.org/docs/develop/theming-drupal/twig-in-drupal/twig-template-naming-conventions

https://evolvingweb.com/blog/drupal-7-drupal-10-migration-your-step-step-guide

https://www.youtube.com/watch?v=gvBGDFQ2M64

https://tomswebstuff.com/blog/super-fast-drupal-theme-development-tailwindcss

https://entra.ca/blog/drupal-tailwind-livereload-scss/

Key Modules

Maps

Taxonomy & Views

Display Suite

No Google !

```
"drupal/address": “^2.0"
"drupal/geocoder": “^4.23”,
"drupal/geofield": “^1.61",
"drupal/leaflet": "^10.2",
"drupal/leaflet_more_maps": "^2.1",
"drupal/token": "^1.13.0",
"drupal/tvi": "^2.0@alpha",
"drupal/migrate_conditions": "^2.1",
"drupal/migrate_devel": "*",
"drupal/migrate_plus": "^6.0",
"drupal/migrate_process_regex": "^2.0@dev",
"drupal/migrate_sandbox": "^1.1",
"drupal/migrate_skip_on_404": "^1.1",
"drupal/migrate_source_csv": "^3.6",
"drupal/migrate_tools": "^6.0",
"drupal/paragraphs": "^1.16.0",
"drupal/smart_trim": "^2.1",
"drupal/ds": “^3.22",
"drupal/twig_attributes": "^2.0",
"drupal/twig_tools": "^2.0",
"drupal/twig_tweak": "^3.3",
"geocoder-php/arcgis-online-provider": "^4.4",
```